

**MELODIC IMPROVISATION ON A
TWELVE-BAR BLUES MODEL: AN
INVESTIGATION OF PHYSICAL AND
HISTORICAL ASPECTS, AND THEIR
CONTRIBUTION TO PERFORMANCE.**

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ABSTRACT

“Anything made by man, no matter how many varieties it assumes, and how much of the superhuman it seems to contain, must reveal its secret to the close observer.” Paul Hindemith (1942: 176).

“Are you one of those guys who wants to put crutches under my ass?”
Lonnie Johnson (Keil 1966: 35).

It is the aim of this thesis to define a musical genre by showing how, in the realisation of an improvisation, two key elements - the physical layout of a musical instrument and human movement patterns - are combined to produce music. This thesis takes as a model the twelve bar blues form, and examines the above aspects in the output of two pioneering figures of the melodic improvised guitar: Lonnie Johnson and T-Bone Walker.

The thesis is divided into three sections; the first, which considers context, is divided into four topics.

- Identification of the model - the twelve bar blues form, and an examination of the meaning of the model to black culture.
- Consideration of the role of geography on the emergent style
- The guitar design and development.
- Identification of the pioneering figures of the genre.

The second section, which is concerned with musical, physical and analytical aspects, surveys theories of scale, mode, blues scale and blue notes, and suggests that blues improvisation is inextricably linked to spatio-motor based patterning. A geographical layout of the guitar is presented to aid in the analytical process.

The third section is analytical and attempts to identify the melodic characteristics of the blues guitar genre. A series of transcriptions were made of improvisations of early blues guitar soloists. These are analysed by reduction and expansion. The tones produced in the improvisations were reduced to a modal hierarchy of principal, secondary and incidental tones which are presented on a fretboard form of notation. The resulting mode is reduced to a scale which is compared to theoretical definitions of blues scale. This raw data is then expanded by considering the left hand gestural movement between tones. gestures are seen to be linked together to form cells. These are sub-grouped into various types. Larger structures, motives, are then defined as comprising several cells. The location of the cells in the model is indicated. These are categorised in groups for each performer.

Thus improvisation is presented as an interaction, which takes place in time and space, between left hand movement strategies of the performer and the surface of a musical instrument .

CHAPTER ONE

CONTEXT

A musical performance occurs in a context. One role of this thesis is to place the analysis of an improvisation into a context by considering some of the diverse aspects that may have an influence on the performance. Aspects include: a model, the instrument, historical and geographical setting, culture and style and the experience of the performer.

This chapter considers the blues as a model and its significance to the culture from which the form sprang. The historical period is divided into three sections 1900 - 1935; 1935 - 1945; and post-1945. For each period important developments in guitar design, the influence of geographical region and the impact of contemporary musicians were examined.

1. 1. Model.

In an improvised performance the physical characteristics of the performer and the physical layout of an instrument can be considered as vital aspects that contribute to the creation of melodic material. These aspects come together in the context of a 'model'. The model may, for example, be a compositional form, or a mode with typical melodic contours, or both. Nettl prefers the term 'point of departure' (1998: 13), and Pressing uses the term 'referent' saying that:

... improvisors... use a referent, a set of cognitive, perceptual, or emotional structures (constraints) that guide and aid in the production of musical materials. In jazz, for example, the referent is the song form, including melody and chords. (1998: 52)

Sundberg and Lindblom suggest that: "... harmonic structure serves as a determinant of melodic organisation" (1991: 253). This is clearly true of much jazz improvisation. Nettl points out that "Jazz musicians, obviously, use sequences of harmonies ("changes") and tunes which may be the basis of variation or which may lead to unrelated solo improvisations"(1998: 13), and goes on to observe that the model may transcend the musical to include the tactile and kinaesthetic, saying:

...improvisers always have a point of departure, something which they use to improvise upon. There are many types, extending from themes, tunes, and chord sequences to forms, from a vocabulary of techniques to a vocabulary of motifs and longer materials, from what is easy or "natural" for the hand to what is intellectually complex (15-16).

Pressing focuses his attention on the importance of the model to the improvising musician:

The use of a referent helps to enhance performance outcome in a number of ways: (a) Since the referent provides material for variation, the performer needs to allocate less processing capacity (attention) to the selection and creation of materials. (b) Since the referent is normally available well before performance, pre-analysis allows construction of one or more optimal structural segmentations of the referent and also a palette of appropriate and well-rehearsed resources for variation and manipulation, reducing the extent of decision making required in performance. (c) Specific variations can be precomposed and rehearsed, reducing the novelty of motoric control and musical logic of successful solutions of the improvisational constraints, and providing fallback material in the case of a temporary lack of invention... (1988: 52)

Analysis here examines improvisations on the twelve bar blues model. In performance practice there are a great number of variations to the twelve bar model; eight and sixteen bar forms are particularly common. Blues styles can be broadly divided into two types; country and urban. Country blues, associated with the Mississippi Delta, were commonly performed by one individual, with the acoustic guitar predominantly employed for accompaniment, and "... the style is marked by wide diversity and structural deviations" (Keil 1966: 57). Solo performers may vary the formal structure between stanzas even within the same performance.

In urban blues styles the form is more likely to be standardised. As Ortiz Walton observed, "The formal elements did not set in the blues until the beginning of the twentieth century, with the advent of purely instrumental blues. With more than one player, some general prearranged format had to be devised, and thus we have the beginnings of the standard A-A-B form" (Mongan 1983: 4-5). Furthermore the increasing availability of recordings was not without effect; as Evans points out, "Recordings tend to standardise musical forms." (1977: 289). The urban blues performer T-Bone Walker said "You know, there's only one blues, though, that's the regular twelve-bar pattern and then you interpret over that. Just write new words or improvise different and you've got a new blues" (Berendt 1984: 159).

The type of blues model under scrutiny here is in the form of a 4/4 twelve-bar pattern, which is divided into three four bar phrases. The harmonic pattern is typically:

1	2	3	4	5	6	7	8	9	10	11	12
I				IV		I		V		I	

Fig 1-1. The Twelve Bar Blues Form.

The performances under scrutiny in this thesis adhere to this model with only slight harmonic variation.

The analysis deals with the emergent “guitar solo” in the United States. The term solo used here refers to a section of a piece played by an ensemble where a single player improvises. For Schuller the term solo transcends ‘thematic variation’ and is instead the invention of new melodic material (1968: 83). In a typical blues performance a solo normally comprises a single twelve-bar sequence, or a succession of twelve-bar sequences, whereby a musician improvises over the chord changes of the piece in a single-string melodic manner, while other musicians provide accompaniment. Research here indicates that liberation of the guitar from its accompanying role began to occur in the mid-1920s in certain regions, particularly New Orleans, in the Southern United States.

1. 2. The Blues Model and Black Experience.

The following section considers blues as a phenomenon that occurred in the United States as a result of a syncretism of black and white cultures, the meaning of blues to the black experience, cultural change over time and the relationship between white musicians and black music.

Kubik emphasises that blues evolved on American (and not African) soil, saying that: “...the “birthplace” of the blues is in the United States, and the “birthdate” in the 1890s.” (1999: 49).

Black and white cultures were inevitably exposed to different influences: Lawrence Levine asserts that culture “... is not a fixed condition but a process: the product of the interaction between the past and the present.” (Bigsby and Thompson 1989: 182). Bigsby and Thompson point out that whereas the white population drew on their European past, the blacks “looked back on two pasts - their own, dimly remembered, African past, and the Euro-American past from which the dominant culture drew its strength...”(1989: 182)

Patrick Carr discusses the input of black and white musicians in the development of musical styles in the United States, and concludes that “Country music and the blues are two tributaries of a common source. Nothing in traditional

American music is as white as it might seem, or as black" (1980: 228). Floyd endorses this view "In the early years of the nineteenth century, white-to-black and black-to-white musical influences were widespread" (1995: 58). In the United States African derived elements were adapted within the European harmonic system, and the merging of different musical varieties developed into a new combined musical languages. The effect of this was, in the view of Floyd, to trigger "a process and an aesthetic that would continue to the present and beyond" (1995: 227).

For Floyd a "... psychological alienation from cultural roots, on the one hand, and the rejection by white society, on the other, resulted for many black Southerners in a dismal gloom that was both evoked and lifted partially by turn-of-the-century bluesmen" (1995: 91), and for the bluesman the "... blues song is a personal statement about an individual's view of his or her circumstances" (1995: 76)

It is clear that blues elements and style had their origins in the displacement of a black population into a different cultural setting. For Kubik "... U.S. blues and jazz musicians often occupy a middle position. Neither African nor Western musicians, they have figured out ways to reconcile the African and Western concepts..." (1999: 113).

He goes on to say:

We proceed from the notion that there is no such thing as "roots" of blues, but that the American blues were a logical development that resulted from specific processes of cultural interaction among eighteenth- to nineteenth-century African descendants in the United States, under certain economic and social conditions. (4)

In *The Black Experience* Bigsby and Thompson (1989) point out that the displaced African population in the United States grew at approximately the same rate as the white population, and even though the transportation of slaves from Africa to the USA became illegal in 1808 (the practice continued illegally for some years after) this did not bring about a decline in the black population. After the initial period natural born slaves outnumbered those that had been born in Africa. Indeed "probably less than one in a hundred of the slaves emancipated by Lincoln had actually seen Africa." (Bigsby and Thompson 1989: 182) Even in the eighteenth century newly arrived slaves would have little ability to communicate with those born in the United States. Clearly the displacement, and the mix of different cultures had considerable effect on black culture.

If blues as a musical form of expression (including the expression of blues on the guitar) occurred as a result of the melting pot of cultural influences that were

present in the United States, it was also a response to, and a statement about black experience. The increase in generations of slaves born in the United States meant that little remained of purely African practices. However, elements that may have been retained from their African heritage included songs, stories and belief systems. Musical elements were retained from the African experience in work songs and field hollers.

Floyd believes that blacks in the United States retained an "African cultural memory" (1995: 4), which he defines as "... a repository of meanings that comprise the subjective knowledge of a people, its immanent thoughts, its structures, and its practices; these thoughts, structures and practices are transferred and understood unconsciously but become conscious and culturally objective in practice and perception" (1995: 8). Floyd quotes the jazz clarinetist Sidney Bechet (1897 - 1959) saying that there was "... something happening all the time to my people, a thing the music had to know for sure. There had to be a memory of it behind the music". In speaking of his grandfather, who died a slave as a young man, Bechet said, "Inside him he'd got the memory of all the wrong that's been done to my people... When a blues is good, that kind of memory just grows up inside it" (1995: 8-9)

For Floyd cultural memory transcends the American experience, it goes back,

... to Africa, and the musical retentions and performance practices of African-American music helped and still help to preserve this memory, recalling the mysteries of myth and the trappings of ritual long after they are no longer functional... cultural memory, as a reference to a vaguely "known" musical and cultural processes and procedures, is a valid and meaningful way of accounting for the subjective, spiritual quality of the music and aesthetic behaviours of a culture (1995: 9)

Through this cultural memory black music has deep significance within black culture. It has been described as a "code" (Floyd: 1995), a "secret language" (Shaw: 1987) and a "cipher" (Bigsby and Thompson: 1989)

The contemporaneous view of the record producer Ahmet Ertegun, who co-founded Atlantic Records, one of the largest labels involved in recording black music, said of blues,

The more down home you get, the funkier you get. The more big foot - all expressions for getting down to soul; big foot, mud, red clay. Where does it all come from? It comes from being black. And from being black is where this music emanates. Being black, you go to the very blackness of being black. It's the trouble the blacks have had

since they were brought here. And those black people who grew up in red clay and up to their knees, working all day on some plantation. That's why it's referred to as big-foot music, funky music, down-home music, gutty music - real black music in a black environment under worst possible conditions. (Shaw 1987: 396).

Black blues musicians lived within a culture without really being part of it, and, through their lifestyles, reinforced their own cultural and social identities, because... "a culture's song is a powerful symbol of cultural identity and an avenue of cultural communication" (Dowling and Harwood 1986. 239). Thus for Floyd "... the guitar's "growling vamp" signifies something other than what it speaks of. In short, instrumental blues spoke a musical code decipherable by knowers of the culture but inaccessible to those outside it" (1995: 78)

Shaw says about blues:

It's sad music and it's happy music. Also secret language music. It has two things. By the fact that it's a lament, it has the dignified beauty of black people expressed in it. And because of its obvious innocence and sincerity, it captivated the world. It isn't because it's got a drum that came from Africa, but because it has a soul that came from suffering. (1987: 396)

Bigsby and Thompson suggest that jazz as an art form "expressed a specific cultural experience." (1989: 196), and go on to suggest that the history of the art form is a cipher that was central to the black experience:

For Hughes, its rhythms were those of Negro life. For Ralph Ellison, its subtle combinations of improvisation and fixed form, the dialectical relationship between individual and group, stood as an image of the individual Negro's relationship to his community. Where the blues offered a lyric sublimation of suffering, jazz proposed a more active and complex model. (1989: 196).

Although blues, or blues prototypes at least, existed in the Mississippi Delta region by about 1890, it is estimated that by that year one third of the blacks in the South lived in urban areas. And from this date onwards there began a mass migration to the North. This migration was further stimulated by the First World War. Between 1890 and 1920 around two million blacks moved to the Northern cities, where the black population became more community based, in opposition to the scattered settlements they had known in the South. This community was "homogenised by shared suffering, which quickly established its own institutions." (Bigsby and Thompson 1989: 194).

In response to this migration from 1925 onwards the black artist developed an interest in “examining his environment, defining his own identity and announcing his own new-found sense of cultural independence.” (Bigsby and Thompson 1989: 195). This shift in identity also meant, over time, a shift in black attitudes to blues music. Black practitioners classified the Chicago blues as ‘downhome,’ ‘lowdown,’ ‘dirty’ and ‘gut-bucket.’ Floyd suggests that middle class blacks in Chicago regarded blues as “socially unredeeming” (1995: 119)

Referring to the mid 1940s, Art Rupe, the founder of Jukebox Records, said:

The majors kept recording what we call country blues... The black people I knew never lived in the country. They looked down on country music. Among themselves, the blacks called country blues ‘field nigger’ music. They wanted to be citified. They found a country bluesman like Lee Hooker terribly crude. (Shaw 1987: 182)

The blues performer B. B. King echoes this statement: “When I was coming up, T-Bone Walker was the latest cool thing. I wanted to play like him, not like Robert Johnson.” (1997: 204). Walker being a Texan urban blues performer and Robert Johnson a country blues performer from the Mississippi Delta. King goes on to say:

... in pushing ahead, sometimes we resent the old forms of music. they represent a time we’d rather forget, a period of history when we suffered shame and humiliation. Makes no difference that the blues is an expression of anger against shame or humiliation. In the minds of many young blacks the blues stood for a time and place they’d outgrown. (1997: 205)

Jazz musicians have often emanated from non-black ethnic minority groups in the United States: Jews and Italians have produced prominent performers in the idiom. Berendt believes that blues are socially as much as racially derived: “It would not make sense for a member of the ‘aristocracy’ to sing the blues. They don’t have the blues” (1984: 163). The white guitarist Kim Simmonds, whose career began in the mid-1960s during the British blues boom, echoed this statement when he said in 2001, “It’s interesting that I’ve stuck with the blues, but I feel my working class background - my family were coal miners - gives me a lot to draw on. Adversity is good. It’s often the fuel that feeds artistic endeavours.” (Fox, 2001: 58).

The rhetorical question has been asked ‘can white man sing, (or indeed play) the blues?’ Clearly there would appear to be no physical difference between black and white musicians, as guitarists at least, yet some black musicians seem to imply that white people possess different musical skills to black. Isaac Hayes said, “Now

it was the standard joke with blacks, that whites could not, cannot clap on the backbeat" (Floyd. 1995: 205)

The Louisiana born twelve-string guitar player Huddie Leadbetter (1885 - 1949), known as Leadbelly, describes the blues thus;

Now this is the blues. No white man ever had the blues, 'cause nothing to worry about. Now, you lay at night and you roll from one side of the bed to the other all night long - you can't sleep... what's the matter? The blues has got you. You get up and sit on the side of your bed in the mornin' - may have your sister and brother, your mother and your father around but you don't want no talk out of 'em... what's the matter? The blues has got you. Well you go and put your feet under the table and you look down on your plate - got everything you want to eat - but you shake your head and get up and say "Lord! I can't eat and I can't sleep! What's the matter with me?" Why, the blues has got you, wanna talk to you... (Berendt 1984: 159).

Berendt also suggested that social conditions were an influence, saying:

However, the sociological and social side of this matter should not be overlooked. The blues is black music for one thing, because the living conditions of blacks in parts of the South and in the Northern ghettos are so different from those of whites, not only in degree, but more important, in essence. (1984: 171)

By imitating characteristic, idiosyncratic elements it is possible for any guitarist to create an improvised solo that emulates the style of a blues guitarist. Early white soloists, such as Eddie Lang (1902 -1933), who recorded with the black blues guitarist Lonnie Johnson (c1903 - 1970), clearly did not have a grasp of the blues idiom. Although a fine accompanist, Lang's one chorus solo on the 1928 recording with Johnson of 'Have To Change Keys To Play These Blues' is unconvincing as a blues solo. His phrasing, note selection and string inflections are not within the idiom. Later white performers were able to assimilate blues techniques and style, but Oliver observes that "blues can be simulated but blues feeling cannot, so its exponents contend" (2001: 730). Furthermore, it could be suggested that blues could not emanate from the same cultural memory in white performers.

And yet the influence of blues has been great on white musical forms, as Floyd observed: "The blues was extended and elaborated in ways that would allow it to be transformed into rhythm and blues, rock'n'roll, and, eventually, rock music"

(1995: 131). "The transformation of R&B into a racially integrated music, with blacks and whites claiming it as their own... had begun in the 1940s" (1995: 179)

Keil believes that "One does not have to be a specialist in African cultures ever on the alert for Africanisms or a psychologist of race relations studiously attuned to the marks of oppression in order to understand performance by B. B. King" (1966: 16). As a further shift in the relationship between the blues and black cultural identity occurred during the 1950s, and with the advent of Black Power in the 1960s, some blacks began to regard blues as an anachronism. Ironically at about the same time there came about the rise of 'beatniks' and the 'white Negro' who adopted black cultural forms. Oliver observes that "... when blues gained white enthusiasts, it lost black audiences" (2001: 735). Some whites even appeared to feel that an interest in black music "implied an understanding of the experience from which it derived." (Biggsby and Thompson 1989: 195). This led to the emergence of white blues performers in the United States, notably Mike Bloomfield, but also to the British blues boom, whereby middle class white English musicians were able to learn the characteristic elements of blues soloing. It is significant that Bloomfield was born in Chicago (1943), taking up the guitar in 1956, he began to frequent the south side bars where the likes of Muddy Waters and Howlin' Wolf were playing, and jammed with any blues artist that would let him on stage, and was thus, although white, steeped in the blues tradition. White musicians such as Stevie Ray Vaughan were even recognised by leading black protagonists for their technical abilities to play blues. B. B. King also suggests that Vaughan understands the essence of blues:

Because this country is so predominantly white, it's only logical that white boys have had the most impact in keeping twelve bar blues alive... Eric Clapton is devoted to the blues... and plays the blues as well as anyone and better than most. Bonnie Raitt is a white woman who has devoted her career to boosting black blues. She's a tireless fighter for blues pioneers and a great performer who happens to be one of the best slide guitarists out there...

Of all the white guys, though, Stevie Ray Vaughan earned a place of his own... I remember thinking that another white boy nurtured by black music was going to keep the faith. Stevie did more than that. He played with such incredible technique and genuine soul that he became the boldest guitarist of his generation...

I came to love him as I had loved Mike Bloomfield; these were my sons, these were the children who'd not only learned my craft, but improved upon it...

When Stevie died in a helicopter crash in 1990... the world had lost the man destined to become the greatest guitarist in the history of the blues. (King 1997: 283-4)

White interest in blues forms had impact on black blues performers: B. B. King, referring to the 1960s, said:

... I was almost afraid to say that I was a blues singer... I'm not speaking racially. I'm just talking about when the people as a whole just wouldn't accept us... People like Mike Bloomfield, Elvis Presley, The Beatles, Fats Domino - and people like that helped us quite a bit. (Shaw 1987: 207)

In considering the relationship between black and white performers in the jazz idiom Floyd suggests that "... when improvising, jazz musicians rely on the intuitions and instincts of cultural and motor memory", and goes on to describe the improvisation of the white jazz alto saxophonist Art Pepper asserting that: "Pepper is a white musician who was thriving on African cultural memory and tradition", because for Floyd, "cultural memory... is not racially exclusive, for in absorbing the elements, practices, and transformations of a tradition, one also absorbs its cultural memory" (1995: 140). He goes on to say that "Finally there is the intercultural crossroads of black and white music in the United States" and that "African culture survives now among the whites... [in] music, particularly popular music, jazz and country music." This makes it possible that "African-American cultural memory could drive and support [Art] Pepper" (1995: 270-271).

If blues elements began as a vocal expression of black identity which were adopted by certain pioneering instrumentalists on the guitar, then the physical fingering patterns could quickly be assimilated and copied by other performers of different cultural backgrounds, and even races. Furthermore, it would seem that within the blues idiom that tradition rather than change is the norm. So much so that the melodic phrases that appear to have been pioneered and developed by early blues performers entered into a repertory of blues guitar and are still incorporated in current blues improvisations without appearing as retrogressive elements.

1. 3. 1900 - 1935:

The period 1900 - 1935 saw:

- Significant developments in guitar design that had far reaching effects on the development of musical styles in the United States
- The crystallisation of new musical genres in New Orleans.
- The emergence of the first improvising guitar virtuoso.

1. 3. 1. The Instrument: The guitar in the USA. Design and development.

There follows a description of the physical attributes of the guitar in the United States during the period 1900 - 1935. Developments of the instrument can be seen to have had some effect on the music produced on it.

The guitar became synonymous with blues during the early years of the twentieth century. Grunfeld states that "For blues singers like [Son] House and [Skip] James there was something tactile and responsive about the guitar that a piano could never hope to reach" (1974: 250). Certainly the tactile qualities and responsiveness are very different on the two instruments. The analytical section will consider the realisation of improvisation as a series of fingering strategies on an instrument. Therefore the physical attributes of the instrument itself are of great importance in the consideration of improvisation because, as Pressing states:

... the design of some instruments allows more precise visual feedback and more categorical kinaesthetic feedback than others. This is almost certainly why sophisticated improvisation using advanced pitch materials is more difficult on the violin than the piano, and extremely challenging for the vocalist. (1988: 135)

The guitar is closer to the piano than to the violin. On the guitar fret locations provide strong visual and tactile reference points for the improvising guitarist.

It is not the intent here to provide a history of the guitar, that can readily be found elsewhere, (as in, for example, Grunfeld, Frederic (1974). *The Art and Times of the Guitar: An Illustrated History*, or Evans, T., and M. A. (1977). *Guitars from the Renaissance to Rock*). The history of the blues is closely related to the development of the guitar. The two are inextricably linked in that some developments in the music occurred because of developments in instrument design, and some instrument design occurred because of the demands of musicians. For Oliver "One of the many factors which influenced the character of the blues was the popularity of the guitar" (1969: 27). Evans observed, "The demand for more guitars - first for home entertainment, vaudeville and popular music orchestras, later for blues, country, jazz and folk music - changed the essential nature of American guitar production" (1977: 222). Furthermore, the guitar may not have achieved the popularity that it did among blues players were it not for these developments. These crucial factors will be examined in the following section.

String instruments were tolerated, even encouraged on the plantation, whereas the use of drums was forbidden, and plucked lutes were familiar to black musicians from African derivatives. And by the 1850s the banjo had become the predominant folk instrument in the Southern States. But Oliver believes that: "The

short, staccato notes of the banjo did not accord with the blue's singer's concepts of accompaniment, offering neither long notes nor the warm and deep resonance of a guitar rhythm" (1969: 27).

The guitar was initially imported to the United States from Europe, and most of the early luthiers there were European immigrants. Grunfeld believes that in the United States guitars "appeared on the scene from three directions: The Eastern cities that followed London trends in drawing room music; the Spanish Southwest... and the Negro South" (1974: 238).

The guitar would almost certainly have been introduced into the Southern States across the Mexican border. Mexican settlers were found in Texas, New Mexico and Southern California in the nineteenth century. As Evans points out "The modern twelve-string guitar was introduced into North America from Mexico" (1977: 224). The statement that: "... the proximity to Mexico and the presence of the Spanish-American population in Texas contributed to the popularity of the huge twelve string guitars." (Oliver 1969: 27), is backed up by the fact that during the early part of his career, at the beginning of the century, the blues guitarist Lonnie Johnson favoured twelve-string acoustic guitars, which he often modified by removing the octave strings from the lower three courses. The twelve-string guitar was also popularised by recordings of several other prominent black performers.

Black Cubans had adopted the guitar much earlier than the blacks in North America, which was fairly inevitable as the guitar is fundamental to Spanish music, more so than in the music of other white European-Americans. The Spanish guitar had been taken to the Caribbean and Mexico as early as the sixteenth century (Chapman 2000: 216), therefore it is possible to speculate that the instrument was brought by slaves who arrived in the United States via the Caribbean islands. New Orleans, in particular, had a history of close contact with the West Indies, so much so that musicians have suggested that there are common elements between New Orleans jazz and certain styles of music of the West Indies. Kubik discusses "Influences upon the Deep South from Louisiana, whose musical cultures were much closer to those of the Caribbean in the nineteenth century and had a large share of Congo/Angola and Guinea Coast west African elements, can also be felt in some idiosyncrasies within the blues tradition of the twentieth century" (1999: 100).

Throughout the nineteenth century in North America the guitar was increasingly accepted by the lower middle classes and was used as an instrument for the performance of classical and parlour music. A tuition book, the *Complete Instructor for the Spanish and English Guitar, Harp, Lute and Lyre* was published in South Carolina in 1820, followed in the 1830s by *The American Guitarist*. (Grunfeld 1974: 241). At this time there was a repertoire of light classical pieces for the guitar,

including fashionable compositions such as 'Siege of Sebastopol', 'Wild Rose Medley' and 'Midnight Fire Alarm'. It has been suggested (Oliver, Harrison, Bolcom 1986: 165) that these compositions themselves had an influence on the development of guitar techniques. The open E tuning (E-B-e-g#-b-e') that was commonly employed by black guitarists is sometimes termed the "Vastopol" tuning, a name derived from the 1880 composition 'Siege of Sebastopol', which was performed in that tuning.

Two of the leading figures competing for the rapidly expanding market for guitars in the United States were C. F. Martin and Orville Gibson. Martin, who had moved to the United States from Germany, began making guitars there in 1833, and Gibson, born in 1856 in New York State, began to make guitars in the 1870s.

In the 1920s a number of black musicians, such as the jazz guitarist Johnny St. Cyr (1890-1966), and blues guitarists Scrapper Blackwell (1903-1962) and T-Bone Walker (1910 - 1975), describe constructing their own guitar from such items as cigar boxes. Blackwell said that he made his first guitar from a mandolin neck and a cigar box. Mississippi born blues guitarist Big Bill Broonzy (1893 - 1958) said "When I was about ten years old. I made a fiddle out of a cigar box; a guitar was made out of a box of goods for my buddy Louis Carter, and we would play for white peoples picnics" (Mongan 1983: 4), and Mississippi born blues singer Muddy Waters (1915 - 1983) said "All the kids made their own git-tars. Made mine out of an old box and a bit of stick for the neck. Couldn't do a thing with it, but you know, that's how you learn" (Mongan 1983: 4). Louisiana born Robert Pete Williams (1914 - 1980), who began playing the guitar in 1934, said "I made my first guitar. I made it out of a cigar box and a good stout long board, and it had five strings of baling wire. Hurt my fingers on it" (Evans 1977: 287).

Cheap guitars were also beginning to be manufactured. In 1894 the mail order company Sears-Roebuck was offering seven different guitar models in their annual catalogue, along with instruction books and collections of popular songs with guitar accompaniment. In 1908 the company was listing mail order guitars in their catalogue for \$1:89. This included a spare set of strings, a capo, a tuition manual and a fingering chart. In 1909 they were promoting as many as twelve models, which is some indication of the success they were having in the cheap mass market. By 1920 Sears were distributing over five million copies of their catalogues to rural America, containing listings of cheap instruments, song books and sheet music. Economic considerations, then, had an influence on the growing popularity of the guitar, which was both cheap and portable. According to B. B. King:

At that time, a horn was costing like \$100... Out of the twenty-two fifty a week I was making, after you brought groceries and other necessities, you could only save seven to eight dollars. So you

brought whatever instrument you could afford - and that was the guitar. (Shaw 1987: 222)

One of the principal influences on guitar design was the musicians need for greater volume in order to perform before larger groups of people, and to compete in ensembles and against louder instruments.

A major influential development that took place in guitar design in the United States was the use of strings made of steel, as opposed to the gut or nylon used on Spanish guitars. As Evans observed "... all the main types of steel-string guitar now in use are essentially of American design, and were developed in the late nineteenth and early twentieth centuries" (1977: 220). Both the Gibson and Martin companies began to produce steel strung guitars by the turn of the century. Evans says "Steel strings have higher tension than gut or nylon and so transfer more energy to the top [of the guitar] and thus produce a louder volume" (1977: 220). Furthermore, he goes on to say that steel strings "produce more overtones than nylon - giving a characteristic 'jangling' tone" (220). The advent of the steel string is also central to the blues idiom because it facilitates inflections that are vital to attain the vocal-like slurs, and the neutral pitches of blue notes. Nylon or gut strings stretch making inflections difficult to attain with any degree of accuracy.

The importance of the inflection of strings can be seen from the following example. On the steel string guitar the bass strings have a central core that is 'wound' by a thinner steel wire. The construction of these bass strings does not facilitate inflection to any great degree, (although a slight micro-tonal inflection, particularly of the bass E string, is common within the blues idiom). It was standard that the four lowest strings were wound in this fashion. However, with the inflection of the wound G string the thin binding is prone to becoming worn from the friction with the metal fret and, furthermore, an unwound or 'plain' G facilitates a greater degree of inflection. Because of this it has become commonplace for the lead guitarist to replace the 4th wound string (the G string) with a 'plain' string. A number of guitarists have claimed credit for this innovation. The Oklahoma born blues guitarist Lowell Fulson (b1921) implies that he believes that T-Bone Walker was the first. Describing Walker's technique Fulson has said: "... and instead of a wrapped G he [Walker] used a plain one, because you couldn't bend or quiver a G without it would unwind on you too fast. So the slick G became the thing, mostly all blues players went to it." (Dance 1987: 165)

Nylon strings exert a pull on the guitar of around one hundred and five pounds. The increased tension of steel strings increases this pull to between one hundred and eighty five to two hundred and forty pounds depending on the gauge. This gave rise to a need for greater strength in the guitar's construction. In 1922 Thadders McHugh patented the "adjustable metal reinforced truss rod for the neck,

which was fundamental to the development of the modern guitar" (Duchossoir 1981: 4). The truss rod, fitted into a groove cut in the neck of the guitar, counteracts "the tendency of the pull of the strings to make the neck bow" (Evans 1977: 266). The added reinforcement "permitted the necks of Gibson instruments to be considerably slimmed and streamlined for easier playing" (Duchossoir 1981: 4). Evans implies this influenced the tactile aspect of guitar playing saying that the narrower neck, "evolved to suit generations of country, jazz, folk and blues players, who find it easier to handle and more appropriate to their fingering techniques" (1977: 266).

As the solo style of guitar playing emerged guitarists struggled with the instrument's lack of volume to compete in ensembles. The guitar could be recorded loudly enough in an ensemble by careful microphone placement, but for live work the solo guitarist had to work with a quieter ensemble.

During the 1920s because of insufficient volume the jazz guitarist was unable to solo in the context of a big band dance music. This inspired a desire to increase the volume of the guitar. The acoustic guitar described thus far is termed a 'flat-top' guitar. On this type of instrument the strings terminate at a bridge which is glued onto the soundboard. Vibrations are "transmitted to the table by a rocking motion of the bridge" (Evans 1977: 220).

A new, innovative design was created with the 'arch-top' guitar, primarily by the Gibson company who drew on the construction concepts of the violin, which featured a carved top and back giving greater strength to the body. On the arch-top guitar the "strings pass over the bridge and are attached to a tailpiece. The soundboard is activated by more vertical oscillations" (Evans 1977: 220). Evans goes on to say that the "tilted neck allows a higher bridge, which increases the angle of the strings as they pass across it and thus the vertical pressure on the table. The increased pressure helps to transmit more string vibration to the top, and gives the guitar greater volume" (1977: 221)

The Gibson L5 arch-top guitar was designed by Gibson employee Lloyd Loar and introduced in 1923. The instrument had steel strings, two f-holes for sound projection, and was designed to be played with a plectrum. The advent of this instrument caused the guitar to supersede the banjo in the rhythm section of jazz bands. According to Duchossior "... it still remains today one of the greatest achievements in the field of acoustic guitars, and a standard of comparison for musicians." (1981: 2)

A European attempt to overcome the volume limitations of the guitar was designed by the Italian guitarist and instrument maker Mario Maccaferri, and manufactured at the Selmer factory in Paris beginning in 1932. The body of the

instrument contains a second, internal soundbox which increases volume and sustain. This instrument was popularised by the Belgian jazz guitarist Django Reinhardt (1910 - 1953).

It would take a more radical innovation than these, as will be shown in section 1. 4. 1, to fully liberate the guitarist from his primary role as an accompanist.

1. 3. 2. Geographical and historical considerations: New Orleans.

The imitation on one instrument of melodic lines that evolved on another may give rise to atypical fingering patterns. This could be seen to be influenced by geographical location. In Africa, for example, the melodic material in some guitar styles was developed in imitation of *mbira* (the thumb piano of Zimbabwe and neighbouring countries) melodies. It would be informative to contrast the improvised melodies of an American blues guitarist with those of an African guitarist. The guitar style of African musician Ali Farka Touré, who has been called the “Bluesman of Africa”, has been variously compared to Lightnin’ Hopkins, John Lee Hooker, J. B. Lenoir and Big Joe Williams. He has collaborated with American blues musicians such as Taj Mahal. In Greece the eight string bouzouki, has the same tuning as the top four strings of the guitar, and yet the idiomatic melodic material that is produced on the instrument comprises fingering strategies that are very different from those employed in the blues guitar genre. Comparisons have been drawn by Holst (1975: 77) between Greek *rembetika* and blues. These comparisons are, however, more cultural than musical.

In New Orleans in the early years of the twentieth century syncretism gave rise to new musical genres. Blues had been brought to the city by itinerant guitarists, who’s influence may be seen in the adoption of blue notes by jazz musicians. Guitarists influence on the burgeoning jazz style can also be seen through their rhythmic role in string bands. In the New Orleans of the early twentieth century the evolution of a melodic guitar style also occurred.

Turn-of-the-century New Orleans was a melting pot of diverse cultures and peoples; French, Spanish, English, Italians, Germans, Slavs and Africans, all of whom brought their own music. Referring to the early years of the twentieth century musician the pianist and composer Jelly Roll Morton (1890 - 1941) said, “We had every different kind of person in New Orleans. We had French, we had Spanish, we had West Indian, we had American, and we all mixed on an equal basis...” (Lomax 1991: prelude)

Despite the shortage of recorded evidence from the early years of the century, and the “often inconsistent testimony of contemporary musicians” (Bradford

Robinson 1986: 343), it is evident that the first style of jazz arose in New Orleans. Although Rust's book is titled *Jazz Records 1897-1942* (Rust: 1982), he believes a 1917 recording is "... the first recording acknowledged to be "jass", when the Columbia label recorded and Victor issued the first titles by the Original Dixieland Jass Band". He goes on to say that his book also includes "... important and interesting records made of ragtime, reaching back to 1897 and the earliest known recordings of the then new, exciting, even daring syncopated rhythm that preceded jazz by two decades." (1982: i). The cornetist Buddy Bolden (1877-1931) is often cited as the earliest recognised jazz musician. In New Orleans various social and musical elements, including blues, brass band music and piano rags, synthesised into jazz.

Berendt (1984: 8 - 10) proposes that the four main contributions to the evolution of jazz are;

- The French and Spanish culture,
- Two different black populations, African and Creole, the latter of which emerged from the more liberal social attitudes of French colonial culture, some of whom had become Free Negroes before the civil war.
- There was a great deal of European serious and popular music in the city. In the first decade of this century the city had 30 orchestras.
- All of the above elements came together in Storyville.

As was seen above the blues form crystallised in the first decade of the twentieth century with improvisation as a central aspect, and Oliver (1988: 122) suggests that the development of rural blues in the Southern United States is independent from jazz. If New Orleans did not play an important role in the development of blues itself, blues form (in the twelve-bar model) and blues content (the blue note) were quickly assimilated and embraced by New Orleans jazz musicians: "By the 1920s the blues had become a national craze and a permanent fixture of jazz language." (Schuller 1968: 32). Leonard Feather has said that: "... the blues is the essence of jazz... the notes of the chords which are essential for blues are the notes that are essential for jazz - the flat third, flat seventh, etc." (Berendt 1984: 158). Williams said; "There would be no jazz without the blues" (1978: 66). Blues timbres and intonations were, however, considered inappropriate to any other than the lower-class black establishments.

W. C. Handy (1873 - 1958) contributed to the introduction and popularisation of blues elements in the popular song. He used the word 'blues' in the title of a song as early as 1912, having claimed to have heard blues in St. Louis in 1892. King Oliver's Creole Jazz Band, who began recording in 1923, performed "improvisational blues played by an integrated group of instrumentalists..." (Williams 1978: 62).

As the guitar is the pre-eminent instrument in the country blues idiom it seems reasonable to surmise that guitarists would have contributed to bringing blues elements to jazz. Evans quotes Charles Love who had said: "Uptown in New Orleans they had a lot of country guitar players used to come to town and sit around in barber shops you know, and play" (1977: 287). The guitar also became a prominent instrument in New Orleans bands:

Country guitarists like the twelve-string player Stonewall Matthews who played with Kid Ory's Woodland Band in 1905 alongside violinist Raymond Brown... must have done much to bring blues and string band elements into New Orleans music. (Oliver 1969: 49)

In rural blues forms, the guitar is largely used as accompaniment to the voice and not as a soloing instrument, other than in short call and response patterns that are sometimes represented by an instrumental answering response to a vocal phrase. "The joint 'accompanying' and percussive function of the guitar in much country blues is so powerful that the concepts 'rhythm' and 'melody' can hardly be disentangled." (Roberts 1972: 183 - 184)

The New Orleans string band, a common ensemble that consisted predominantly but not necessarily exclusively of stringed instruments, developed at the same time as jazz and had roots in ragtime and blues. Jelly Roll Morton claimed that he played the guitar from the age of seven (in about 1897) and suggests that a typical string band ensemble would comprise bass, mandolin and guitar (Lomax 1991: 6), and would perform a repertory of dance forms: schottisches, waltzes, mazurkas and quadrilles. Morton also said that they would play the popular tunes of the day such as 'Hot Time in the Old Town Tonight' (Lomax 1991: 6). Bradford Robinson has suggested that, although a cornettist, Bolden emerged from a string band, and not from the marching-band tradition (1988c: 133). The role of the string band in the emergence of the melodic solo guitar style is important. In order to perform on the guitar in a single string solo manner the instrument needs to be part of an ensemble, or be accompanied by at least one other instrument that is capable of providing a harmonic background. Of the black string bands in existence at this time The Watson family and the Chatman family of Mississippi were probably the best known. The latter were known as the Mississippi Sheiks and their repertory included country dance tunes, blues, folk songs and hillbilly music.

At the beginning of the 20th century the guitar was commonly heard in the streets and in the bars and brothels of New Orleans. The red light district of Storyville, (which opened in 1896 when Alderman Sidney Story passed a law that prostitution should be restricted to one district) offered regular paid employment for musicians. For Oliver,

It is not without historic significance that many of the early jazz bands featured guitarist and fiddle players. Buddy Bolden's guitar players include both Jeff "Brock" Mumford and Charlie Galloway who were playing together in the New Orleans streets in 1885, before the first jazz bands appeared. (1969: 49)

There is a photograph of Bolden (1877 - 1931) with his jazz band, which was taken in about 1895 which includes a guitarist. Oliver identifies the guitarist as Galloway (1969: 16). However, the same photograph appears (reversed, with the guitarist playing left-handed) in *The New Grove Dictionary of Jazz* (Jazz (i) Fig., 1. 583) with the guitarist being identified as Mumford. Mongan also identifies the guitarist as Mumford, showing him as a right-handed player (1983: 8).

Galloway (1865-1914) had led a dance band in New Orleans in 1894 that was possibly joined by Bolden. The repertoire probably consisted of popular tunes of the day arranged for orchestral playing, with the melody stated on one instrument with harmonic support. There was probably little use of improvisation in these bands, but instead music would have been rehearsed until the musicians had learned their parts. Mumford (1870-1937) was a member of Bolden's first band (which implies that it is Mumford in the photograph). Evidently his contribution was to the rhythmic drive of the music: he is described as playing the guitar by strumming all six strings in the 'uptown' style, that is on each beat of the 4/4 bar. (Mongan 1983: 10). Because the guitar did not have the volume to compete as a solo instrument when it was used in ensembles with wind instruments it remained as a rhythm instrument.

Bud Scott (1890-1949) claimed that he began learning the guitar at the age of four (Mongan 1983: 14), and by about 1905 was playing with band leader John Robichaux and the cornettist Freddie Keppard. He is featured on recordings with King Oliver, Johnny Dodds and Jelly Roll Morton. There is some documentation as to the type of music being produced by guitarists in New Orleans at around the turn of the century, and it seems that there too the characteristic style of playing was in a chordal, rhythmic manner. Mongan describes Scott playing the guitar with a "virile, strumming technique that came from the elbow, which gave a vigorous, strong sound." (1983:15). Scott himself described the rhythmic, accompaniment function of the guitar saying:

Each Sunday, Bolden went to church... They would keep perfect rhythm there by clapping their hands, I think I am the first who started four-beat for guitar, and that's where I heard it (all down strokes - four straight down). (Mongan 1983: 14)

Recorded solos by Scott, in which he favours the lower register, are rare.

Johnny St. Cyr (1890-1966) was fourteen when he began playing both guitar and banjo. Between 1905 and 1908 he led his own trio. He confirms that the role of the guitarist in hot bands was to "hit straight four beats, with little runs every two or four measures to break up the monotony." (Mongan 1983: 11)

For much of his early career St. Cyr played a six-string guitar-banjo which he had constructed himself from a banjo body and a guitar neck. St. Cyr went to Chicago in 1923, where he recorded there with Louis Armstrong, King Oliver and Jelly Roll Morton. On a 1926 session under the name New Orleans Bootblack Wanderers, St. Cyr recorded a solo on a track called 'Flatfoot'. He also takes a solo on the Hot Seven's 1927 'Willie the Weeper'.

St. Cyr described a recording session with Morton;

... Jelly Roll would ask me, 'Can you make a break here?' I tell him, 'Okay.' He say, 'Alright, we're going over it. Now when we get there, you make the break. Okay, let's take it.' Just let your conscience be your guide, see... If you sounded good, all right. If you didn't sound so good, he'd say 'Wait a minute, that don't sound so good, see if you can't make something else.' You'd try something else and get something that sounded good to him. Or if you didn't get the right idea then, why he'd give the break to someone else. (Lomax 1991: 195)

Another guitarist, Lonnie Johnson, could be heard in playing in New Orleans in the early years of the twentieth century. At this time he was playing in a string band with his brother James 'Steady Roll' Johnson in an ensemble that comprised guitar, banjo and violin.

It is apparent that the emergent solo-style of guitar playing is related to geographical considerations. Bailey and Driver claim that "Rock guitar style undoubtedly drew inspiration from a variety of sources, including folk blues guitar, its transformation in the lead guitar style of rhythm and blues." (1992: 67) Whereas this statement contains some truth there is an implication that lead guitar grew out of country blues, a belief that is commonly held. However, it may be necessary to turn to another source to find where the guitar was first used as a melodic lead instrument.

It would appear that lead guitar, the improvising of a new melody over a model such as, for example, the chord sequence of a twelve bar blues, is not a blues phenomenon, but a jazz one. Instrumental improvisation is certainly a defining characteristic of New Orleans jazz. It seems, with hindsight, that the solo guitar style emerged not in the Mississippi Delta, but in New Orleans, and developed later in

Texas. Research indicates that solos were not played in a blues context prior to the recordings of Lonnie Johnson. B. B. King endorses this view:

Scholars... like to talk about the Delta bluesmen and how they influenced each other. They break down the blues according to different parts of Mississippi and say each region gave birth to a style. Well, as a Delta boy, I'm here to testify that my two biggest idols - guys I flat-out tried to copy - came a long way from Mississippi. Blind Lemon [Jefferson] was from Dallas and Lonnie [Johnson] from Louisiana. I later learned about Delta bluesmen like Robert Johnson and Elmore James and Muddy Waters. I liked them all, but no one moulded my musical manner like Blind Lemon and Lonnie. They entered my soul and stayed. Sixty-five years after hearing them on Aunt Mima's precious Victrola, hardly a day goes by that I don't listen to them. (King 1997: 23 - 24)

Jazz bass player Pops Foster (1892 - 1969) recalled hearing Lonnie Johnson playing in the New Orleans streets before 1917. He said that Johnson was ... "the only guy we had around New Orleans who could play jazz guitar" (Shaw 1987: 13). There is evidence for this from the fact that some of Johnson's earliest recordings of the twelve bar model are with jazz bands: Louis Armstrong's Hot Five (in 1927), and Duke Ellington's band (in 1928), and on these recordings Johnson is a featured soloist.

Gushee describes some of Armstrong's Chicago recording sessions saying that: "In these last recordings with the old Hot Five, Armstrong found an adequate foil in Lonnie Johnson, an astounding instance of a major blues artist more than able to hold his own in a jazz context." (1988: 308). He goes on to say that: "Perhaps it was a matter of Johnson's background as an urban musician (from New Orleans) rather than a rural bluesman." (1988: 329)

It would appear from contemporary accounts that the single string melodic style of guitar playing was only slowly disseminated and that only a few guitarists were playing in a solo style prior to 1940. Some guitarists, particularly following the lead of the Texan jazz guitarist Charlie Christian (1916-1942), state that they were trying to create 'horn-like' lines in their solo improvisations. Musician Eddie Durham (1906 - 1987) said that Christian "... had big eyes to sound like a saxophone" (Grunfeld 1974: 258). Christian played with the Al Trent Sextet in 1938 and by this time he was playing single note melodic lines on the electric guitar as a third part voiced with trumpet and saxophone, thus removing the instrument from its rhythmic function. It could be suggested that the single string manner of playing originated in New Orleans where jazz solos on horns were commonplace. This influence

contributed to generating a very different style of guitar playing to that of the Mississippi Delta. Speaking of Christian the musician Bidley Fleet has said:

It was a man in a band told me that there was a guitar player out there that played guitar like a horn... he played the guitar - he picked it the way everyone else do - but it was the way he went over the neck... Christian was one of the few early ones to do that. Later many did. (Gitler 1985: 42)

With reference to about the same time period the guitarist Barney Kessel (b1923) said:

Almost all of the black musicians that I played with, at that time, had all known Charlie Christian and had already heard him. And they were trying to tell me, in a way, not necessarily to play like him, but when I would play a solo they would say, "play like a horn." I did not know that they meant to play a melodic, single-note line, to try and play and sound like a tenor saxophone or a trumpet. I recall my very earliest feeble efforts were to play either chords, like a ukulele, or to play single notes, but I would tremolo it as though it was a mandolin. They would say, no, play like a horn. Finally, when I did hear Charlie Christian it had an enormous impact on me. That was on records... His style was very reminiscent of Lester Young to me. And I could see what they were talking about. (Gitler 1985: 42 - 43)

Lonnie Johnson's melodic solos on his first recordings of 1925 are already that of a confident, mature soloist. The record producer Larry Cohn said:

Lonnie Johnson was playing 12-string guitar in a large band context as cleanly as one could possibly envision. Charlie Christian was fantastic, but Lonnie Johnson was doing it 10 years before. (Obrecht 1993a: 53)

Charlie Christian's recording career began fourteen years after that of Lonnie Johnson.

The single string solo style of guitar playing seems to have been pioneered by a handful of musicians, but in order for the technique to take hold it had to be disseminated and this occurred by various means. If the style was slow to catch on in broader circles it did eventually spread and different distinct regional styles began to evolve. Radio and records contributed to the surge of creativity that characterised the 1930s as aspiring musicians were exposed to vast varieties of music.

Many performers, such as B. B. King, describe learning from recordings:

She [his aunt Mima] had a phonograph, or as we called them a Victrola. When I was a good boy - and I stayed a good boy around her - she would let me play the Victrola. And that's how I got into those old blues records like Lemon Jefferson. (Shaw 1987: 222)

In *Blues All Around Me*, King expands on this theme:

The most worthwhile thing about Aunt Mima's place was her crank-up Victrola, a machine that changed my life. See, Mima was a music fan. She had the first collection I'd ever seen. She'd go into town and find records, bring 'em home and neatly pile 'em next to the Victrola. You'd wind up the record-player like you wind up a watch. Her first model was a cylinder; later she got a turntable... Aunt Mima taught me to gently put on the platter, set down the needle and then watch the turntable spin. A second passed and then - pow - those beautiful scratchy sounds flew in my face, cutting right through me, electrifying my soul. (1997: 21-22)

Ahmet Ertegun said,

Black people were clamouring for blues records... Around 1949, that was their main means of entertainment. Harlem folks couldn't go downtown to the Broadway theatres and movie houses. Downtown clubs had their ropes up when they came to the door. They weren't even welcome on Fifty-second street where all the big performers were black. Black people had to find entertainment in their homes - and the record was it. (Shaw 1987: 397)

The importance of these readily accessible sources of dissemination was that it gave the aspiring musician access to data that could be a well-spring of new influences. As Carr points out:

Radio and records suddenly disseminated an enormous quantity and variety of music an open minded musician was quick to use as building blocks for his development as a musician and eventually synthesise into his own style. (1980: 99)

Beginning in 1925 Lonnie Johnson made some 500 recordings over a forty year timespan.

1. 3. 3. Lonnie Johnson.

There is some disagreement as to Johnson's date of birth, 1889 and 1894 are often cited, but according to Val Wilmer (1963) Johnson was 63 in 1963.

Schuller believes that "... it was natural that the rhythm instruments, initially confined to very primitive *rhythmic* functions, aspired to enter the *melodic* realm... the guitar found its melodic voice with players like Lonnie Johnson..." (1989: 226). This research suggests that Lonnie Johnson was an innovator who initiated the single string, solo improvisatory style of guitar playing in the United States and in doing so he contributed to the emancipation of the guitar from the rhythm section. In this he influenced his contemporaries; Teddy Bunn, Scrapper Blackwell, Al Casey and Eddie Lang. After Johnson practically every guitarist interviewed makes reference to his 'influences', which lead, directly or indirectly, back to Johnson. Subsequent to interviewing Johnson, Wilmer said; "He owes no allegiance to any particular school" (1963: 5). With Johnson, it seems, there was no direct precedent. In considering Johnson's importance it is worth considering Kubik's statement that,

... we have to bear in mind that culture is not necessarily transmitted in proportion to people's numbers. One charismatic personality will suffice to release a chain reaction. One virtuoso musician can end up being imitated by hundreds. This fact has often been neglected by researchers proceeding from a collectivistic perception of culture (1999: 13).

And Johnson's importance, it would appear, has been greatly overlooked, a situation which is only in recent years beginning to be redressed. Obrecht entitled a *Guitar Player* magazine article "The Most Influential Blues Guitarist Ever? Lonnie Johnson" (1993a:48). According to Obrecht (50) Johnson influenced T-Bone Walker, Blind Willie McTell, Peg Leg Howell, King Solomon Hill, Tommy McClennan and Gary Davis. Guralnick identifies Johnson as an influence on Scrapper Blackwell and Robert Nighthawk (1982: 62).

Davis says of Johnson: "Though largely uncelebrated today, he was one of the most influential figures in American music - the inspiration Robert Johnson and Elvis Presley had in common (to say nothing of Charlie Christian and B. B. King" (1995: 146). Presley covered Johnson's hit 'Tomorrow Night' in tribute to the blues performer. Bob Dylan also covered the same song on his 1992 album 'Good As I Been To You'.

Johnson's influence has been acknowledged by other guitarists: Big Bill Broonzy, Sam Chatman, Charlie Christian, Carl Davis, K. C. Douglas, Lowell Fulson, Clifford Gibson, Lightnin' Hopkins, Little Son Jackson, Robert Johnson (Evans 1982: 257), Albert King, B. B. King, Freddie King, Little Hudson, Willie Reed, Walter Roland, Alec Stewart, Johnny Shines, Sluefoot Joe, Carl Smith, and Henry Townsend (Oliver 1969: 89).

Kernfeld states that:

A movement away from country blues had already begun in the late 1920s with recordings by the eclectic Lonnie Johnson and by the team of pianist Leroy Carr and guitarist Scrapper Blackwell... Big Bill Broonzy, Tampa Red, and others constantly avoided the archaic aspects of country blues. (1986: 99)

Shaw suggests that the development of "... urban blues was the result of New Orleans meeting Mississippi and Arkansas - of jazz meeting the blues." (1987: 20). It is more realistic to consider the musical developments of Johnson as separate from country blues. What was being developed by him was quite different to the work of the country blues players. Johnson's 1925 recordings display a style that has already reached a level of technical competence. These recordings pre-date the recordings of many country blues performers and his style can thus hardly be regarded as the 'movement away from country blues' that Kernfeld describes. Oliver observes that "The earliest forms of the blues were not the first to be recorded. Mamie Smith's recording of 'Crazy Blues' in August 1920 brought a popularised form to a large audience..." (2001: 731). Her recordings were followed by other 'classic blues singers'; Edith Wilson, Sara Martin, Clara Smith, Lottie Bearman, Ma Rainey, Ida Cox and Bessie Smith who "... had heard rural blues singers whose blues they borrowed" (Oliver 2001: 731). It is easy to overlook the influence of urban blues on country blues: as Davis observes "The music made by blacks in cities in the 1930s altered forever the shape of country blues, once it was transported to rural areas on phonograph records" (1995: 141). In the opinion of Oliver (2001: 731) the earliest rural blues recordings were Papa Charlie Jackson's 'Papa's Lawdy, Lawdy Blues' (1924), and Blind Lemon Jefferson's 'Long Lonesome Blues' (1926). And rural blues recordings were not made in large numbers before 1926. Oliver observes that:

All the major recording blues singers of the 'twenties were located in the space of five years. Blind Lemon Jefferson was first recorded in 1926, Texas Alexander in 1927, Tommy Johnson in 1928, Charley Patton in 1929, Willie Brown and Son House in 1930. (1969: 97)

Patton is considered by Oliver to be; "One of the most important figures in the whole story of the blues..." (1969: 31). Son House did not begin playing guitar

until 1928. Furthermore, Lonnie Johnson was an influence on Robert Johnson. The latter, born around 1914, was so impressed by Lonnie Johnson that he even claimed to be his brother. Davis believes that Robert Johnson “idolized [Lonnie Johnson] to the point of virtually imitating his delivery” (1995: 133). Robert Johnson did not record until 1936. Two songs by him, ‘Malted Milk’ and ‘Drunken Hearted Man’ are most similar in execution to Lonnie Johnson’s style. Lonnie Johnson said of himself, “I am not a country blues singer. I sing blues, ballads, swing - anything. I do what I have to do to keep working... I keep up with the times.” (Wilmer, 1963: 5)

If Johnson’s position is sometimes overlooked it seems that it is partly due to certain blues purists who do not consider him to be what they perceive to be an ‘authentic’ blues performer.

Some musicologists, apparently following the lead of the influential American writer Rudi Blesh, seem to be seeking an ‘authenticity’ in blues that implies that the blues musician should be over sixty years old, have not recorded for at least twenty years, should have been taught by a legendary figure, spent most of his life “as a sharecropper, coaxing mules and picking cotton, uncontaminated by city influences” (Keil 1966: 35) and, preferably, be blind. In Blesh’s writing Lonnie Johnson was characterised as “smooth but without sophistication, using clichés and set patterns, and lacking a deep committed feeling.” (Evans 1982: 97). Such critics have implied that there is stylistically more ‘authenticity’ in the country blues of Robert Johnson than the urban blues of Lonnie Johnson. So much so that when Lonnie Johnson was approached by one interviewer he asked, “Are you one of those guys who wants to put crutches under my ass?” (Keil 1966: 35).

B. B. King has always been quick to credit his influences, and in *Blues All Around Me* addresses both the fact that Johnson has been overlooked, and the question of blues authenticity:

Lonnie Johnson was different. Mima loved Lonnie Johnson and soon I learned to love him even more. It took a minute longer to appreciate Lonnie than Blind Lemon. Lonnie was definitely a bluesman, but he took a left turn where Blind Lemon went right. Where Blind Lemon was raw, Lonnie was gentle. Lonnie was more sophisticated... He had... a lyrical way with the guitar. Unlike Blind Lemon, Lonnie sang a wide variety of songs. I liked that. I guess he found the strict blues form too tight. He wanted to expand. When he sang ‘Tomorrow Night’, probably his most famous ballad, I understood that he was going a place beyond the blues that, at the same time, never left the blues... As my life went on and my passion for blues grew, it hurt me to see that Lonnie never got the critical acknowledgement he deserved. The scholars loved to praise the

'pure' blues artists or the ones, like Robert Johnson, who died young and represented tragedy. It angers me how scholars associate the blues strictly with tragedy. (King 1997: 22)

Through his upbringing in New Orleans in the early years of the century, Johnson would have been exposed to a wide variety of styles: string bands, barrelhouse and ragtime piano, brass bands, street cries and spirituals, through these influences he developed what Oliver called "... a smooth and accomplished guitar technique, too polished and jazz-inflected for the rougher forms of blues..." (1969: 40)

Johnson said (sometime between 1903 and 1914, depending on his date of birth) "When I was fourteen years old I was playing with my family. They had a band that played for weddings - it was schottisches and waltzes and things, there wasn't no blues in those days, people didn't think about the blues..." (Wilmer 1963: 6)

Chapman says that "... it is difficult to categorize Johnson's work in terms of genre" (2000: 50). If Lonnie Johnson's position as a pure blues performer was in question, he might, instead, be considered as the first 'session' player, musically capable of adapting his style to meet the needs of his patrons. Johnson hailed from a New Orleans jazz tradition that had already adopted blues elements as integral to the style. It will be seen that Johnson uses a fingering position on the guitar fretboard that is at odds with many other blues players of the next two decades, whereby he relies less heavily on the use of unresolved blue notes, but incorporates them sparsely within the fabric of his melodic improvisations, in the manner of jazz musicians, such as Louis Armstrong.

Santelli's opinion of Johnson shows a greater understanding than that of Blesh:

To call Johnson a pure blues guitarist would not be entirely accurate. More than any other early guitarist, Johnson brought the blues to jazz, and jazz to blues. He selected his notes with careful consideration, thanks to an understanding of his instrument that ran deeper than that of nearly every other blues guitarist of the day. (1974: 214)

Brit is of the opinion that:

Lonnie Johnson's is a most important as well as unusual position in any list of top twelve guitarists. Basically he was a bluesman...

who utilised basic jazz tenets as a player... he was able to mix freely and easily between the two allied genres. (1984: 47)

Guralnick suggests that the far reaching effects of Johnson's hybrid style crossed regional boundaries:

The style that he developed was no less an influence on Robert Johnson in Mississippi than it was on T-Bone Walker in Texas... Lonnie Johnson was the first great modern blues guitarist, the first to make a clean break with the strummed pre-blues styles of the past, the first to initiate the single-string, horn-like style that would soon become the standard for jazz and blues and would provide a direct model for T-Bone Walker and B. B. King. (1982: 61)

When asked if he liked the music of Robert Johnson, B. B. King replied, "I like some of the things he did. I just didn't idolize him like I did Lonnie Johnson." (Obrecht 1993: 38). Elsewhere King has said: "... Lonnie Johnson - there's one of the greatest, a real musician." (Keil 1966: 107)

Mongan also categorised Johnson alongside three other contemporary jazz guitarists, saying that "Snoozer Quinn, Lonnie Johnson, Eddie Lang and Django Reinhardt made immeasurable contributions to the emancipation of the guitar from purely rhythmic accompaniment work, creating a permanent place for it as a solo voice in the small group format" (1983: 33).

Similarly Johnson's contemporaries in the blues idiom, Scrapper Blackwell and Big Bill Broonzy, who played the guitar in a single string lead style prior to 1949 did not hail from the Mississippi Delta region, but from urban centres. Nor did they originally perform the blues as their sole repertoire, but came to adopt the blues form and blues content.

Blackwell had been taken as a child from North Carolina to Indianapolis. His early repertoire included songs such as the ballad 'John Henry'. He claimed that he only learned to play the blues ... "as they became popular in Indianapolis" (Oliver 1969: 93). Big Bill Broonzy (who was born in Mississippi, but taken to Arkansas as a child) said, "They didn't call what they played blues. They called it Negro reels" (Shaw 1987: 20). Broonzy did not play blues until he went to Chicago in 1920. In the 1930s Broonzy's performance style underwent a transformation away from the country blues style, largely due to the influence of Lonnie Johnson. This stylistic change involved the utilisation of a plectrum, as opposed to using the right hand fingers. Significantly Broonzy felt that the public no longer wanted to listen to country blues because of the changing social environment of the blacks in Chicago,

but later, in the 1950s, reverted to country and folk blues styles in response to the growing interest of a white audience pursuing 'authenticity'.

The Memphis born singer and guitarist Johnny Shines (1915 - 1992) stated that "Lonnie Johnson was the top guitarist". Victoria Spivey said of Lonnie: "Everywhere I turn, I hear him in T-Bone Walker, B. B. and Albert King, Muddy Waters and the younger fellows like Buddy Guy. And, of course, all the white kids are playing Lonnie, most of them thinking they're being influenced by B. B. What I like about B. B. and T-Bone is that they all give Lonnie credit for it" (Obrecht 1993a: 60).

There is clearly a relationship between learning method and performance practice. Practically every blues guitarist from the 1940s up until the 1960s cites Johnson, Blackwell, Walker or King as being a prime influence on their style. Many guitarists state that they taught themselves to improvise by imitating the solos on recordings of these performers. Guitarists of the 1960s also learned by imitating the players of the 1950s, and, through them, influence of the pioneering players can still be discerned in the melodic phrase patterns employed. As B. B. King describes it: "... T-Bone's legacy is living through me" (1997: 284).

A brief résumé of some of the important recording dates of his career (drawn from Leadbitter and Slaven 1968, Dixon and Godrich 1982, and Rust 1982) shows the scope of Johnson's work, the contact that he had with other influential musicians of the period, and the amount of travelling that he did. If Lonnie Johnson was an innovator on the guitar, then these would be the means of dissemination, and increase the likelihood that his style would be imitated.

Johnson was not a so-called 'authentic' musician, and although he only attended school for a short period of time, he taught himself to read and write, both language and music, and told Wilmer "I know a lot about music" (1963: 6). From 1910 until 1917 Johnson was playing within the Storyville red light district of New Orleans alongside the pioneers of jazz such as Buddy Bolden. In 1917, the year that Storyville was closed, he joined a musical review that visited Britain, where he performed in London and Glasgow, returning to the USA in 1918. On his return he travelled extensively, first to Texas and then Missouri. Big Bill Broonzy first met Johnson in St. Louis in 1921.

In the 1920s Johnson was working with Charlie Creath's Jazz-o-maniacs. His first recording was 'Won't Don't Blues' with that band on November 2nd, 1925 in St. Louis. In the same year Johnson gained a recording contract with the Okeh label, recording 'Mr Johnson's Blues' and 'Falling Rain Blues' at his first session on November 4th 1925. In the ensuing years Okeh issued a new record by Johnson every

six weeks, recorded in either New York or St. Louis. Up until 1927 Johnson had performed and recorded on a number of instruments, primarily the violin, but after this time he began to focus his attention on guitar. During this period he accompanied the Classic Blues singers, including Victoria Spivey and Bessie Smith. During 1927 and 1928 Johnson recorded in Chicago, Memphis and San Antonio, Texas.

In a jazz context Johnson made recordings with Louis Armstrong, King Oliver and Duke Ellington. In December, 1927 Johnson recorded four sides with Armstrong, which also feature Johnny St. Cyr on banjo and guitar. Schuller describes the exchanges between Armstrong and Johnson as “one of the highlights of classic jazz” (1968: 109). Johnson makes a significant contribution to ‘Hotter Than That’, a tune based on the chord changes of ‘Tiger Rag’. Schuller said of this recording that “Lonnie Johnson’s stature can be measured by the authoritativeness with which he alternates and imitates two-bar breaks with Louis” (1968: 112). Other tunes recorded with Armstrong are ‘I’m Not Rough’ and ‘Savoy Blues’.

Referring to these Armstrong recordings Berendt stated that:

The surveyable history of the jazz guitar begins with Johnny St Cyr and Lonnie Johnson, both from New Orleans... The contrast between the rhythmic chord style and the soloistic single note style which dominates the evolution of the guitar, is emphasised from the very beginning in St Cyr and Johnson (1984: 300).

The foremost example of this is on the Armstrong recording ‘I’m Not Rough’, analysed below, which features the two guitarists playing together in their contrasting styles.

Johnson also recorded with Duke Ellington in New York in 1928. In Gammond’s opinion: “His scope is limited to the blues and simple standard themes, but within this field he is a virtuoso guitarist” (1977: 208). The titles and recording dates with Ellington are as follows:

‘The Mooch’	1:10:1928
‘Hot and Bothered’	1:10:1928
‘Move Over’	13:10:1928
‘Misty Mornin’	20:11:1928

Ellington’s manager Irving Mills had arranged a recording session with Johnson and the singer Baby Cox because of their popularity with black audiences

(Charters 1981: 208). 'The Mooch' features a call and response duet between Johnson and Baby Cox.

Johnson contributed a solo to a recording of 'Stardust' in 1928, with the Chocolate Dandies, but Schuller suggests that, because blues elements are lacking, his "style does not suit this piece or arrangement particularly well" (1989: 313). Also in 1928 Johnson recorded with the white guitarist Eddie Lang in New York. On November 15th the two guitarists accompanied Texas Alexander on 'Working Ox Blues' and 'The Rising Sun'. Two days later the Okeh A & R man Tommy Rockwell brought the two back into the studio to record their first duets 'Two Tone Stomp' and 'Have to Change Key to Play These Blues' (of the five improvised choruses on the latter, Lang takes only a one chorus solo). Lieberson says that: "Recognizing Johnson's greater authority as a blues player, Lang stepped out for only an occasional solo" (1979: 262).

'Bull Frog Moan' and 'Guitar Blues' were recorded as duets with Lang on the 7th May 1929. 'A Handful Of Riffs' and 'Blue Guitars' were recorded under the name Blind Willie Dunn's Gin Bottle Four on the 8th May 1929. 'Deep Minor Rhythm Stomp', 'Midnight Call Blues', 'Hot Fingers' and 'Blue Room Blues' were recorded with Lang on October 9th, 1929. Johnson said that he considered these sessions to be his greatest musical experience. On April 30th, 1929 Johnson and Lang played with King Oliver and Hoagy Carmichael on 'Jet Black Blues' and 'Blues Blood Blues'.

Mongan believes that the 1929 recording of 'Mahogany Hall Stomp' with Armstrong demonstrates "probably the first time ever, guitar solos that had melodic continuity and harmonic interest that took them far beyond the simple rhythmic backings of early jazz" (1983: 23). Johnson contributes blues elements in his guitar solo.

Oliver states that:

The Great Depression marks a watershed in blues. Inevitably the Negro suffered worst when the stock market crash of 1929 brought the subsequent downhill tumble of the entire national economy. A quarter of the nation's total labour force was out of work by the summer of 1932 - twelve million unemployed. (1969: 102)

In 1932 Johnson left Okeh records, and did not record again for five years. Throughout the Depression Johnson played only sporadically, for a time on a Mississippi riverboat with Charlie Heath's Orchestra and also in Cleveland with Putney Dandrich's Orchestra. During this period he was forced to seek an income from modes of employment other than music; he worked in coal-mines, on the

railroads and in a steel mill. Five years later, in 1937, Johnson began recording for Decca records, and secured a gig playing at the Three Deuces night club in Chicago, a residency that he held until 1940. Between 1939 and 1944 he recorded for Bluebird records, usually with piano accompaniment. Between 1925 and 1945 he had recorded 201 titles under his own name.

From 1947 Lonnie Johnson recorded for the King label and had four hits on the R 'n' B charts, the titles and recording dates are:

'Tomorrow Night'	28:2:1948
'Pleasing You'	30:10:1948
'So Tired'	19:2:1949
'Confused'	3:2:1950

In 1952 Johnson undertook an eleven month tour of England, but at this time his recordings were not selling well and, on his return to the United States, he had to resort to construction work to make a living. In 1958 he was a janitor at a hotel in Philadelphia. Jazz enthusiast Chris Albertson found Johnson and persuaded him to record again. Between 1960 and 1963 Johnson recorded seven albums.

In 1967 Johnson was hit by a car in Toronto and suffered a stroke. Unable to play the guitar he performed at the Toronto blues show in February 1970 accompanied by Buddy Guy. He died four months later.

1. 4. 1935 - 1945:

The period 1935 - 1945 saw:

- The development of the electric guitar.
- The evolution of new styles in Texas and the Southwest.
- The ascendancy of the first electric guitar innovators.

1. 4. 1. The electric guitar. Increased volume, new techniques.

In chapter 1.3.1 it was seen that in the first decades of the century the design of the guitar was constantly undergoing modification in an attempt to increase the volume to cope with larger performance situations. More radical attempts to solve the problem of volume limitation of the guitar were being made by several people contemporaneously. Their solution was to electronically amplify the volume of the instrument. On the electric guitar a 'pick-up' converts string vibrations into an electrical signal. Duchossoir explains that the pick-up:

... consists of a permanent wire magnet and a coil of insulated copper wire. The coil is placed, either around the magnet, or around a polar mass magnetized through contact with the magnet. The pick-up is then placed in such a way that a magnetic field is created around the strings, the vibrations of which generate a weak current in the coil, that can be amplified and transmitted to a loudspeaker. (1981: 14)

Schuller has said that "... with the advent of the electric amplification and the arrival of Charlie Christian, the guitar emerged as a full-fledged member of the melodic fraternity" (1989: 226). The advent of the electric guitar had two major effects on the development of improvised guitar styles:

- The use of amplification meant that the guitarist could be heard in larger group situations. Thus the role of the performer was not limited to providing rhythmic accompaniment.
- The new instruments, with their capacity for greater sustain and comparative ease of playing, facilitated new developments in technique and expression.

Mongan describes the importance that the electric guitar had in the evolution of jazz:

The basis of acoustic guitar technique was to play with as many down strokes as possible to obtain maximum volume and definition. Using the weight of the forearm, with the elbow as a pivot, gave the acoustic player great attack. Now, with the amplifier doing all the 'hard' work, the guitarist was free to use a more subtle, lighter approach which adapted better to the requirement of the bop player (1983: 99).

However the electric guitar was not quickly accepted in popular music. Lloyd Loar, a musician and composer, began working for Gibson in 1919. He was responsible for design and experimental work. Loar was the craftsman responsible for the design of the Gibson L5 guitar, described in chapter 1.3.1. The first experiments with amplifying guitars for the Gibson company had been carried out by Loar as early as 1924. Gibson, however, felt that there would be no market for the electric guitar, so Loar resigned and formed the short-lived Varitone Company in the same year.

The earliest commercially produced electric guitar was by the Rickenbacker company in 1931. It was designed by George Beauchamp and Paul Barth and was a

seven string electric Hawaiian guitar with a cast aluminium body and neck and an electromagnetic pick-up. Barth recollected that Beauchamp:

... took an old speaker and ran a string between the magnets and got some sound out of it. George discovered that by putting two magnets together and opposing them, the magnetic field was increased many times, and he had a very powerful pickup (Mongan 1983: 80).

At about the same time the De Armond company began to produce guitar pick-ups. Dobro were also producing resonator guitars with a pick-up in 1932, and Gibson soon followed suit: Walter Fuller began making pick-ups for Gibson in 1934, using them first on Hawaiian models. Amplifiers to accompany these models were made in the same year by Lyon and Healy.

In the early to mid-1930s several musicians began experimenting independently with the amplification of the guitar. George Barnes (1921 - 1977) was born in Chicago and his first recordings were with the blues singers Big Bill Broonzy, Blind John Davis, and Washboard Sam. Barnes was one of the few guitarists in the 1930s to develop an individual single string style and was among the first guitarists to play electric guitar (in 1931) and record with it (in 1937). His brother, who Barnes described as an "electronic genius", built him an electric guitar pick-up in 1931:

Because he knew I wanted to play solo lines which could be heard in a band... There were few guitarists then who soloed. I didn't want to play rhythm, I wanted to play melody. I heard many records by Django Reinhardt but I couldn't relate to his playing because he sounded foreign to me... When I was young I hung around with Lonnie Johnson and he taught me to play the blues (Mongan 1983: 82).

Barnes has said: "Nobody knows who had the first electric guitar; maybe I did" (Ferguson 1979: 20).

In the late 1930s the electric guitar also began to be used by musicians in Western Swing bands, (a genre developed in Texas that combined characteristics drawn from jazz and country music) as both a rhythm and lead instrument. The instrument was particularly popularised in the genre by the guitarists Leon McAuliffe and Eldon Shamblin with the Texas Playboys, the sound spreading quickly to country music generally. By the end of the 1930s the use of electric string instruments radically changed the sound of country music.

In the jazz idiom Eddie Durham (1906 - 1987) was one of the first exponents of the electric instrument. Durham, born in San Marcos, Texas, was playing the

guitar through a separate amplifier by 1932. He recorded 'Hittin' the Bottle' on 30th September, 1935, with the Kansas City Six, featuring Count Basie. This is probably the first recorded example of any form of guitar amplification, at least three years before any commercially built form of electric guitar was generally available. Durham said:

I was playing straight [acoustic] guitar and I always hit the big bands. The bands drown you out, you see, so I'd take a straight guitar and get into the mike, put it right in the soundhole of the guitar so it could be heard. I don't think anyone had done that before. (Mongan 1983: 80-81)

In 1937, while he was touring with Count Basie, Durham encouraged both Charlie Christian and Floyd Smith (1917 - 1982) to take up the electric instrument. Durham said, "I don't think Christian had ever seen a guitar with an amplifier until he met me. I influenced Floyd Smith to get an electric guitar too" (Shaw 1987: 116). Durham had met Christian in Oklahoma City and encouraged him to buy an electric Gibson ES-150, an electrified version of the L-50 guitar, which had been introduced to their catalogue in 1936 at a cost of \$72.50. The model was later re-named the Charlie Christian model. Eddie Barefield, a saxophonist and arranger for the band leader Bennie Moten, knew Christian when he was in Oklahoma City and said that he had taken guitar lessons from Eddie Durham (Gitler 1985: 41).

Solo passages of increasing length and complexity can be heard by Durham on recordings by Moten, Lunceford and Count Basie. Basie's 'Time Out' (1937) contrasts Freddie Green's acoustic rhythm guitar with Durham's electric solo. By 1938 Durham was also using a Gibson ES-150. Durham recorded nine titles in 1938 on an electric guitar in the Kansas City Five and Kansas City Six bands. During the same year the Virginian born guitarist and composer Leonard Ware recorded amplified guitar with Sidney Bechet. Durham's most ambitious guitar playing can be heard on recordings dating from 1940 under his own direction including 'Moten Swing', 'I Want a Little Girl' and 'Kansas City Jazz' (Decca DL 8044).

Floyd Smith (1917 - 1982), from St. Louis, played ukulele from 1932 with bands led by Dewey Jackson and Charlie Creath. He first recorded on electric guitar with the Jeter-Pillars Orchestra in 1937, and then went on to play with Andy Kirk between 1939 and 1942, recording one of the first electric guitar blues solos 'Floyd's Guitar Blues' (Decca 2483) with that band on March 16th, 1939.

Jazz guitarist Teddy Bunn (1909 - 1978) who first recorded with electric guitar in 1940 describes the new expressive qualities of the instrument "... I was always one for experimenting and I wanted to get a hard staccato tone. Electric gave me more opportunities" (Mongan 1983: 41).

However, the two pre-eminent figures whose influence helped with the widening acceptance of the electric guitar in popular music were the blues performer T-Bone Walker and the jazz musician Charlie Christian. Eddie Durham said "T-Bone was the first I heard playing it, [electric guitar] though I'd been fooling with it, too. But Bone was as big in blues as Charlie Christian was in jazz, the greatest I ever heard" (Dance 1987: 46).

Oliver states that "T-Bone Walker was one of the first, if not the first, blues guitarists to use an electric instrument and his influence on... innumerable other guitarists was immense" (1969: 144). Walker claimed: "... I bought my first electric guitar in 1935. I'm one of the first ones to play the electric guitar, and you might say I'm a legend" (Fiofori 1972: 44). This pre-dates both Charlie Christian and Floyd Smith's use of the electric guitar, although Smith and Christian both recorded with it before Walker. Walker did not record on the electric guitar until 1940.

Walker's wife Vi said "All the time on the road he was backstage practising and experimenting with the electric guitar... It was more exciting than when he played acoustic, and the sound was so new that people started talking" (Dance 1987: 57). Record store owners wife, Marili Morden, saw Walker playing in Los Angeles in 1940. She said "I wasn't expecting to prefer electric guitar to acoustic, but the way T-Bone played was fantastic. It was new to us all, and I was dumbfounded" (Dance 1987: 51).

Walker said: "I started many a guitarist off on the blues. For about five years I was up there by myself. There weren't too many blues guitarists could play amplified guitar" (Jones, 1975: 10).

All of Lonnie Johnson's earliest recordings were on acoustic instruments. He did not record with an electric guitar until November 2nd, 1939.

Initially there was some degree of prejudice against the electric guitar. Mongan observes that around the period from 1936 to 1938 Christian was experimenting with the electric guitar, and said that in this he was: "Unlike most guitarists, who were afraid of it, and who spurned the instrument as a bastard invention" (1983: 86). In a well known incident the record producer and jazz critic John Hammond took Christian to Los Angeles to audition for Benny Goodman. Goodman refused to let Christian plug in his amplifier. Hammond had to arrange to surreptitiously get Christian, plus guitar and amplifier, onto the bandstand at Goodman's gig at the Victor Hugo Restaurant. Hammond described the incident:

When Benny got on the stand and saw Charlie sitting there, I thought he was literally going to kill me, since he had told me

there was no possible way he could use him. He got back at me by calling 'Rose Room,' a tune he was sure Charlie didn't know. He was mistaken, because he did know it and, on the third chorus, he signalled Charlie to take a chorus. Charlie went wild. One chorus followed another... Nobody had heard anything like it from any musician, let alone a guitarist (Mongan 1983: 88-89).

The ES-150 model was not a spectacular success for the Gibson company, who did not even produce electric guitars during the period from 1942 to 1946. Although Christian's popularity in jazz, and Walker's in blues went some way to making the electric guitar acceptable, a broad commercial acceptance of the instrument was not established until after 1945.

1. 4. 2. Geographical Considerations: Texas and the South West.

Keil identifies three geographical regions and three cities that are of *primary* importance stylistically in the evolution of blues: "the Delta, the Territories, the Southeastern seaboard; Chicago, Kansas City, and Memphis" (1966: 59). Many country blues musicians from the Delta region migrated north to Chicago, often via Memphis, and their influence on later urban styles is evident via this route. The record producer Jerry Wexler refers to this influence on Chess records:

World War I started bluesmen moving up North, and No. II made it a mass migration. There were three paths. Up from Mississippi and Alabama, they headed into Chicago - and we had strong Delta influence on Chess Records.

Wexler went on to say that: "From Oklahoma, Texas and the Southwest, they went to California - that was T-Bone Walker and the honky-tonk, jazz combo influence" (Shaw 1987: 341).

Blues traditions also existed in St Louis, Missouri, Louisville, Indianapolis, Indiana, Cleveland, Cincinnati and Kansas City, all of which were either important railroad intersections or part of migratory routes.

The blues of Texas and the Southwest were, however, relatively uninfluenced by Delta blues. Instead, a separate stream of development was taking place in the Territories. The term 'territory band' was applied to bands in the 1920s and 1930s that toured an area bordered by St. Louis on the east, Denver on the west and extending from Texas to Nebraska. These bands would be based in the regional capitals, such as Dallas, El Paso, Oklahoma City, San Antonio, Missouri and Kansas, and tour the outlying areas. In these areas there was a great deal of cross-fertilisation between jazz and blues.

Kansas City had strong traditions in both ragtime and rural blues which contributed to a different evolution from the region's jazz style than that of New Orleans, including a prevalence of twelve-bar blues forms. The most influential of the Kansas City bands was that of the band leader Benny Moten with whom the guitarist Eddie Durham played, as described above. Blues and riff tunes supplied the framework for the band performances that relied heavily on improvised solos. Bradford Robinson defines riff as:

A short melodic ostinato, usually two or four bars long, which may either be repeated intact... or varied to accommodate an underlying harmonic pattern. The riff is thought to derive from the repetitive call-and-response patterns of West-African music, and appeared prominently in black American music from the earliest times (1988b: 379)

Kubik has also drawn attention to the African origins of the riff:

Another harmonic principle inherited from Africa, one that is particularly prevalent in the Mississippi Delta blues style, is the concept of *bourdon*, a term we use to designate the drone-like sound produced by sustained open-string techniques on guitars..., but also any continuous bass or basic tone that forms a keynote... It can also accommodate the use of riffs - repeating short melodic-rhythmic patterns embedded in larger forms (1999: 111).

Riffs also appear in the accompaniment patterns of blues, where; "The conflict between an unvaried riff pattern and the changing harmonies of the blues progression became one of the most distinctive features of the blues and its derivatives" (Bradford Robinson 1988b: 397). As will be seen in the Johnson and Walker analyses riffs are frequently used in short, reiterated blues phrases to create tension.

Keil believes that "The Territories - Texas and the adjoining sections of Louisiana, Arkansas, and Oklahoma, plus Missouri and points West - is in many ways more stylistically significant than the Delta" (1966: 59). Some of the most significant developments in Afro-American music occurred in this region. Musicians that were interviewed by Keil (in *Urban Blues*) described the differences between Mississippi and Texas in terms of heavy versus light, dense versus open.

Local dances in the state of Texas around the turn of the century were subject to many different ethnic influences, and by the 1930s there was great diversity of styles, including dance musics: jigs, schottisches and reels, polkas and waltzes of the German and Czech immigrants to the area, Mexican, and French Acadian dances,

frontier cowboy songs, the rural banjo and fiddle traditions and country music, blues, western swing, singing cowboys, and gospel. Anglo-American folk song, a repertoire that included fiddle tunes, hymns and square dances, was brought by the first settlers from such places as Tennessee.

During the period from 1942 to 1952 bands, such as those lead by T-Bone Walker, Lowell Fulson, Louis Jordan and Pee Wee Crayton, featured an ensemble that included a blues singer, electric guitar and saxophone, toured in the Southwest. The Walker and Jordan bands were the most influential on the development of an urban blues style that pre-empted the so called 'Memphis synthesis', which is described later. .

Schuller, drawing attention to the importance of a guitar tradition in Texas, has said: "It should be noted that... Durham, Christian and McAuliffe were all born in Texas" (1989: 356), and went on:

It is fascinating to contemplate the role that geography and chance encounters have played in the history of jazz... in Bismarck, North Dakota... Charlie Christian was revolutionising the guitar, with shock waves of after-effects that, for better or worse, can be felt unto this day in all popular music, even rock. (350).

... the Southwest is guitar country and blues country, the Texas blues tradition particularly being one of the oldest indigenous traditions and probably much older than the New Orleans idiom that is generally thought to be the primary fountainhead of jazz. And Christian embraced all of that: a guitarist who brought the Southwestern blues into modern jazz - and more. (562).

Schuller also observes that in Texas "... a guitar tradition of the kind he [Christian] represented and perfected was already of long standing by the time he burst onto the scene in New York in mid-1939." (565).

If Christian's influence on jazz and on the emergent electric guitar was vast then T-Bone Walker's influence on urban blues styles was equally far reaching.

1. 4. 3. T-Bone Walker.

Aaron Thibaux Walker (known as T-Bone) was born on May 28th 1910 in Linden, Texas, but raised in Dallas.

Walker, like many other contemporary musicians, made his first guitar and described his first attempts at articulating blue notes:

My first guitar was an old cigar box I fixed up with nails and strung wire between. I got a few tones like that. Some fellows used rubber bands, but this was better because I got to bend the notes, like mama did. When I was small I used to listen to her when I was supposed to be in bed. She'd give me the chills sometimes, so I aimed at gettin' hold of some of those notes. I was about twelve, I guess, when she loaned me her guitar a time or two. The big day came when Marco (Washington, his step-father) walked me to the store, and I picked out a banjo and paid for it with the change I'd put by (Dance 1987: 17).

Perhaps it is no coincidence that the two most influential early electric guitarists knew each other. During Walker's formative years he and Christian played together. According to Dance (1987: 2 and 235) in about 1930 they shared a guitar teacher, Chuck Richardson, who helped shape their techniques. It seems that there is no further documentation of this and Walker's wife Vida Lee Walker said "... he never took a lesson in his life." (Sheridan 1979: 232)

With reference to the time that he was playing in his high school band Walker has said, "I played the banjo to be heard. We didn't have mikes back then, and acoustic guitar got drowned... After a while I left, and Charlie Christian took my place for a time" (Dance 1987: 23). Walker and Christian became friends, jammed together in their teens and, Walker has claimed, played together in the streets for money: "Charlie would play guitar a while and I'd play bass, and then we'd change and he'd play bass and I'd play guitar" (Sheridan 1979: 231). The record producer Bob Thiele, said "The one big difference between him [Walker] and Christian was that T-Bone more or less confined himself to the blues structure" (Dance 1987: 159).

However, it is significant that Walker, like Johnson before him, has stated that he had played a repertoire of material other than blues and during his formative years was influenced by exposure to the mixture of styles that were being performed on the South-Western circuit. Referring to his childhood Walker said:

Marco Washington could play every kind of instrument. Everyone in his family knew some kind of music, and they'd formed a group that played together, with mandolins, guitars and violins. Mama played guitar, pretty good, too. Good enough to fall in with Huddie Leadbetter more than once... Blind Lemon [Jefferson] I remember well. Though I was only a kid, he had me to lead him around...

But when the family went out it wasn't only blues that we played. Plenty of requests would come in, and we played fast things as well. On the weekends all who could play would go with Marco and his folks and parade through the streets. Jesse Hooker had a saxophone and a clarinet, but he was the only one had a horn. The others had mandolins, guitars and bass, and some had homemade strings (Dance 1987: 11-12).

Although both Johnson and Walker became known primarily as blues performers, both worked with jazz musicians and in jazz contexts. Walker's son Junior said that "... he had a terrific ear... He always knew what was going on, and he liked the new progressions, the augmented chords. That's how he took up jazz" (Dance 1987: 124). Walker has said that he was playing jazz on guitar but found it easier to make a living from playing blues.

In 1929 Walker won a talent show, part of the prize for which was a week working with Cab Calloway in Dallas, which led to his first recording session for Columbia in the same year. Two blues songs were recorded with the pianist Douglas Fernell, under the titles 'Trinity River' and 'Wichita Falls' and were released under the name Oak Cliff T-Bone. (This session is described by Walker in Dance 1987: 24). These early recordings were, however, in a country blues style and "... the result bore slight resemblance to his later finely-honed style. That was developed during the '30s" (Adler 1980).

Prior to 1934 Walker played with the Coley Jones String Band and accompanied the singers Ma Rainey and Ida Cox. From 1934 Walker was a resident of the West Coast, where he spent time touring with the Les Hite Orchestra. Like Johnson before him Walker was able to adapt his playing style to fit in with the jazz band of Hite and recorded with both Hite and Cab Calloway in 1939. He began recording extensively in 1940, mainly in Hollywood and Los Angeles.

The first recordings T-Bone made under his own name were in July 1942 for the Capitol label, and included the songs 'Mean Old World' and 'I Got A Break Baby', both of which are analysed below. On many 1942 sessions Walker was the featured guitarist on recordings of the pianist and singer Freddie Slack. During 1945 Walker recorded in Chicago, returning to Los Angeles in 1946 where he recorded for the 'Black and White' label. In 1955 Walker recorded in Chicago for the Atlantic label. Highlighting a difference between regional styles Dance has remarked of these recordings that "the effect was foreign to him, since the back-up band played Chicago style" (1987: 155).

T-Bone Walker and B. B. King were both widely influential in the broader dissemination and popularisation of an urban blues style. But King's guitar playing

had been greatly influenced by Walker and Lonnie Johnson. Keil believes that Walker is:

... the greatest single influence on postwar blues before the emergence of B. B. King... T-Bone Walker's guitar technique was far in advance of his competitors; when combined with a distinctive voice and a flair for showmanship, his style provided the model for Lowell Fulson, Pee Wee Crayton, the young B. B. King, and many others (1966: 36).

Walker's stylistic innovations stem from his use of the electric instrument which allowed him to play single string melodic lines that could be heard over a rhythm section and a change to thinner strings which allowed him to employ a greater degree of string bending than had previously been used.

When asked by Fiofori if there were cross-influences between jazz and blues guitarists at that time, Walker's reply implies that, for him, the biggest stylistic difference was the extensive use of string bending in the latter, he said:

No. It's just that I was playing jazz on the guitar, but I wasn't getting anywhere with jazz. So I decided to stick with the blues... I played what you might call a singing-guitar style, by using the strings and tuning the strings up where they would turn and give me a bluesy tone instead of just giving me a jazz tone. And I changed the strings on the guitar. I changed the wound G to a plain G where I could get this whining tone. I developed a style of guitar playing, and this is what people made me... it's the style of the guitar I'm playing, not that I'm a hell of a guitar player. But it's a style that I developed, and everybody tries to play this same style in the blues (1972: 44).

Guralnick clearly feels that Walker's influence as an instrumentalist is pivotal, having said that:

It was the mellow-toned, lightly swinging guitar led blues of T-Bone Walker that first established the modern blues sound and exerted a dominant influence not only on B. B. King but on nearly every other postwar bluesman, from Lightnin' Hopkins to Muddy Waters, to the hot guitarists of Memphis and Chicago... He was also responsible for a revolution in blues guitar playing... It is a remarkable feat of retrospection to listen to T-Bone Walker after the fact and hear so many of the ideas of B. B. King, Chuck Berry, Robert Junior Lockwood, Freddie King fully realised years before any of them achieved their mature style... All over Texas,

Oklahoma, California, in Memphis and Chicago, too, guitarists sprang up imitating that sound. And B. B. King, who learned at T-Bone's feet, exported that sound to the world, transforming himself in the process from a race recording star to international blues idol. (1982: 113-114)

Adler (1980) echoes this saying that Walker was an:

... innovative stylist who influenced countless rock, blues and jazz performers to such an extent that there are many who've never heard his name or music who nevertheless play his licks. So vast is his influence that even today one can hear the echoes of his phrases in almost any guitar solo on any rock record.

Oliver suggests that: "His influence on Oscar and Johnny Moore and, eventually, innumerable other guitarists was immense" (1969: 144). And for Sawyer: "More than any other electric blues guitarist, T-Bone established single string runs as the main form of expression for the electric guitarist in blues music" (1981: 169).

Walker's playing was an influence, then, on Lowell Fulson and Clarence 'Gatemouth' Brown in the 1940s and Johnny 'Guitar' Watson, B. B. King and Chuck Berry in the 1950s. And also Willie Nix, Little Milton, Albert King, Junior Parker, Johnny Winter, Duane Allman, Jeff Beck, Mike Bloomfield, Otis Rush, Johnny Moore, Jimi Hendrix, Eric Clapton, Steve Miller, Albert Collins, Pee Wee Crayton, Guitar Slim and Buddy Guy. Bobby Bland said of Walker, "That was my main man. Great guitar player, and a great stylist" (Guralnick 1992: 73). When he was asked by Jones if he still inspires many players Walker said; "I guess so. They keep coming up to me and asking advice. I think you must have five hundred T-Bones all over the States." (1972: 10).

From the commentary of his contemporaries it would seem that the specific nature of Walker's influence was in the development of his single string melodic style of guitar playing. The guitarist Little Milton was born in Mississippi and first played in the country blues accompaniment style but later took up the melodic single string guitar style under the influence of Walker. He has said:

T-Bone Walker inspired me and a lot more guitar players and singers because that cat had always played clean. He would pick one string at a time and most other guitar players in those days would like frail it and make chords. He played one string at a time, no sweats (Haralambos 1974: 24).

The blues record producer Ralph Bass, who worked for the Black and White label when Walker recorded for them, said:

T-Bone was an influence on jazz musicians as well... Some of them may not know him, but he changed the whole thing around. He was the first to play fills, and the sound of the guitar today, and everything that has happened to it since, came from T-Bone Walker, that's all (Dance 1987: 93).

Walker's improvisational guitar technique in blues appears to parallel, for many commentators, Christian's in jazz. B. B. King discussing Walker's technique said that:

T-Bone was the first person I ever heard on guitar who had a distinct sound, different from everyone. It's a sound that anybody, me or anyone else, could only come by from him... He was the first guy I ever heard using a ninth chord playing blues. I don't think he did much up-and-down strokes. I think he mostly picked down (Dance 1987: 165-166).

The guitarist Duke Robillard echoes this; "T-Bone played much more on chords than the other players. He used sixth and ninth chords a lot, working around them and playing lines that would sound great on a horn" (Dance 1987: 239).

King's description of Walker's picking technique invites a comparison with Christian's, perhaps indicating a cross influence between the two men. Eddie Durham describes his influence on Christian:

I told Charlie the way to sound like an instrument, staccato, was to use all down strokes. Most of the guys at the time played alternating up-and-down strokes across the strings. The down stroke gave a sharper tone like a saxophone (Mongan 1983: 87)

King elaborates on this: "T-Bone had a single string style that, like Charlie Christian's, reminded me of a horn... you could tell he knew jazz... When I heard T-Bone... I knew that nothing about guitar blues would ever be the same" (1997: 79-80). Elsewhere King has said: "When I first heard T-Bone's single string solo on *Stormy Monday*, it drove me crazy. I could never believe a sound could be that pretty on an instrument" (Shaw 1987: 114).

During the post-war years Walker was not only at his creative peak, but also enjoyed greatest popularity. By the late 1950s T-Bone was "established as a unique father figure, straddling the worlds of jazz, blues and rock-'n'-roll" (Adler 1980).

But, for the critic Welding, the influence of Walker on modern black music transcends the blues idiom:

T-Bone Walker is the fundamental source of the modern urban style of playing and singing blues and is widely regarded as having started it all back in the 1930s when, almost alone, he forged the fleet, jazz-based guitar style that has since become the dominant approach for the instrument, and with it, the blues itself. In a very real sense the modern blues is largely his creation. The blues was different before he came onto the scene, and it hasn't been the same since... He participated in and contributed to virtually every development black vernacular music has witnessed in the last half-century. A number of them he initiated as well (Welding).

1. 5. After 1945.

The period after 1945 saw:

- Further developments in electric guitar design.
- The evolution of new styles in Chicago and Memphis.
- The consolidation of the single string melodic electric guitar style.

1. 5. 1. The electric guitar after 1945.

“Little did [Eddie] Durham and [Floyd] Smith realize what they were unleashing on the world, unable to imagine the earsplitting decibels and raunchy sonorities of modern rock guitars” (Schuller 1989: 358).

Electric guitars were designed after 1945 with a ‘cutaway’, which enabled the performer to access the upper octave of the guitar fretboard above the twelfth fret. The Gibson ES-350 model of 1947 had a rounded ‘Venetian’ cutaway.

Broadly speaking there are two types of electric guitar; hollow bodied, (also known as semi-acoustic), and solid bodied. The semi-acoustic guitar, because of resonance of the body, is prone to ‘feedback’ whereby part of the sound output from a loudspeaker is returned to the pick-up, causing the guitar’s body to vibrate and resulting in a high pitched screech. Feedback, once considered a problem, during the 1960s became an integral part of the guitarists vocabulary. For Mongan,

The guitar underwent a major technological revolution with the advent of the solid body instrument. First experimented with back in the early 1940s by pioneers Les Paul and Leo Fender, the solid-body instrument was developed to overcome the problem of

feedback... for the first time, the amplifier, used for 20 years only to boost the feeble volume of the guitar, became an integral part of the instrument. (1983: 193/194)

The solid body enhanced the possibility of further increasing the volume and the sustain of the guitar. The first commercially manufactured solid-body electric guitar to succeed on a significant scale was the Fender Broadcaster of 1948. This model was renamed the Telecaster in 1950. This was followed by the Gibson Les Paul in 1952. Les Paul had worked on the idea of a solid bodied guitar as early as the 1930s, but Gibson at the time were, once again, unconvinced of its commercial appeal.

1. 5. 2. Chicago Blues: Evolution of Delta country style

It has been suggested above that the melodic single string style of guitar playing was disseminated from its origins in New Orleans to Texas, and was then developed into distinct regional styles by later practitioners in other cities.

In New Orleans many musicians had found employment in the red light district of Storyville. When the district was closed in 1917 on orders from the Secretary of the Navy, who saw the area as a threat to the armed forces, many musicians either gave up playing or else joined the exodus of black musicians from New Orleans to the Northern cities. In five years half a million black people moved North, one tenth of these to Chicago's South Side centred on a ghetto area along State Street.

In Chicago a distinct regional style of blues evolved in the late 1940s and early 1950s which had the close links with Delta blues, as many of its exponents had their origins in the Delta. Haralambos (1974: 26) believes that the Chicago style is an urban evolution of the Delta country styles, and is not a synthesis as is the Memphis style. He goes on to say that the Chicago style, which uses a rough, even distorted sound, is described by practitioners as 'dirty', 'gutbucket', 'lowdown' and 'downhome' (32).

Those features which are most characteristic of the Delta country blues style, such as the use of drones, slide guitar, repeated melodic figures and a rough sound, are transplanted to the Chicago South Side by blues musicians from Mississippi. The Chicago style is exemplified by Muddy Waters, J. B. Lenoir, Robert Nighthawk, Johnny Shines, Little Walter, Howlin' Wolf, and John Lee Hooker. Junior Wells, Elmore James, Willie Nix, Walter Horton, and Sonny Boy Williamson, all of whom have their roots in the Delta, and cite as their main influence country blues musicians, particularly Son House, Robert Johnson and Charlie Patton. Muddy Waters, Nighthawk, Lenoir, Shines, J. B. Hutto and Elmore James all continued and

developed the bottleneck style of Son House and Robert Johnson. As Muddy Waters said, "We're doing the stuff like we did 'way years ago down in Mississippi" (Shaw 1987: 290). These musicians began to record in Chicago between 1947 and 1955, played together in public and on each others recordings, and can be seen to be mutually influential. Chicago blues was a version of country blues augmented by the use of an ensemble normally consisting of electric guitar, bass, drums, harmonica, sometimes piano, and included a lead guitarist. Muddy Waters' band, for example, featured Pat Hare on lead guitar, and Hubert Sumlin played lead guitar in Howlin' Wolf's band. These two bands dominated the Chicago scene in the early 1950s. The rise of the larger ensemble influenced the music itself, as Johnny Shines has said:

...you take Chicago blues style, when you get up there with a band, you have to play together real tight just like it was any other arrangement. It was different, of course, with country blues, because there wasn't any arrangement. If your bluesman felt like holding a note for nine beats, he held it for nine. *He didn't know nothin' about any one-two-three-four* (Cook 1975: 133).

Muddy Waters left Mississippi for St. Louis in 1940 and arrived in Chicago in 1943. At that time Broonzy was a dominant figure in Chicago, and he helped Waters with his musical career. Muddy Waters began his recording career in 1947. Two sides from that year: 'I Can't Be Satisfied' and 'I Feel like Going Home' have been described by Pete Welding as launching "Waters' career as an important recording artist and were responsible for initiating the modern electric blues style since labelled 'Chicago Blues'." (Shaw 1987: 297). These recordings gained widespread sales in Chicago and other areas, particularly in the South. Pat Hare, who also worked with Howlin' Wolf in the late 1940s, had a raw guitar sound that gave Muddy Waters' band a rough edge.

In 1948 Howlin' Wolf moved to West Memphis, where he brought his first electric guitar, and recorded there for Sam Phillips in 1951. In 1953 he moved to Chicago where he became a competitor of Muddy Waters. His primary influences were Charlie Patton, and Blind Lemon Jefferson, but he was also familiar with the recordings of Lonnie Johnson, Tampa Red and Blind Blake.

Hubert Sumlin, (1931 - 1976), joined Howlin' Wolf's band in 1954 for the first Chicago recording sessions and played with the band, on and off, for more than twenty years, including on numerous classic recordings such as 'Spoonful', 'I Ain't Superstitious', 'Smokestack Lightnin' ' and 'The Red Rooster'. During 1956 Sumlin had an argument with Howlin' Wolf and performed with his main competitor; Muddy Waters.

If the predominant influence on the Chicago style was from the Delta region it is possible that various other influences may have shaped the style of the lead guitarists: Pat Hare had also worked as an in-house guitarist for Sun Records in Memphis. Furthermore, both Lonnie Johnson and Big Bill Broonzy had also been important figures in Chicago from the late 1920s.

The Chicago and Memphis styles were not exclusive to those cities. The Chicago style also developed in Memphis and the Delta, and the Memphis style was played in Chicago. Elmore James had made his first records in Mississippi in 1952, and alternated between Chicago and the Delta. Howling Wolf's first recordings were in Memphis in 1948, but were leased to Chess records of Chicago in the early 1950s. Haralambos (1974: 26) suggests that there was a greater demand for the 'downhome' style of blues in Chicago, but the style declined in popularity in Memphis as the Memphis synthesis developed. He goes on to suggest (1974: 37) that the Chicago style was also eclipsed, to some extent, in Chicago itself by the Memphis style.

1. 5. 3. The Memphis Synthesis

Memphis and Chicago blues styles developed contemporaneously. But in opposition to the Chicago style, the timbre of the Memphis style is described as 'modern' and 'clean'.

The blues style that developed in Memphis brought together elements derived from various sources; to be explicit the direct influence of Johnson, from New Orleans, and Walker, from Texas, can be seen in the single note melodic lines of B. B. King.

The first melodic single string lead guitarists whose origins were in the Mississippi Delta and had grown up with the Delta blues, over and above other forms of music, are to be found in Memphis and Chicago. B. B. King, Little Milton, Albert King, Bobby Bland, and Junior Parker all grew up in the Delta States, and, in the period after 1945, shared common influences. They all developed their styles and recorded in Memphis in the late 1940s and early 1950s, and were the prime figures in creating what Keil termed a 'Memphis synthesis': a combination and urbanisation of elements derived from the three following styles:

- Delta country Blues.
- Kansas City Jazz - Blues.
- Texas urban Blues derived from T-Bone Walker.

B. B. King is one of the pre-eminent guitarists drawing together the different styles that comprise the Memphis synthesis. He was born and raised in Mississippi

where he had gained a knowledge of Delta country blues styles and had listened to country blues musicians such as Blind Lemon Jefferson, Blind Boy Fuller, Bukka White, Bumble Bee Slim, and Peetie Wheatstraw. King left Mississippi in 1946 and hitchhiked to Memphis. He stayed with his cousin, the bottleneck guitarist Bukka White for a period of time. White's influence can be discerned in that King tried to imitate the sound of the bottleneck. He said. "I could never use a bottleneck on my fingers as he did, so I learned to trill my finger. That's how I get the vibrato. My ears would tell me that I was doing what he was" (Shaw 1987: 220).

When King came to Memphis he worked as a disc jockey, during which time he was exposed to a vast number of recordings and, as Keil observed; "This intensive and extensive exposure to a broad variety of musical styles must have had considerable effect on the formation of his own style and repertoire" (1966: 67). It is clear that the styles of both Johnson and Walker were influential on the emergent Memphis synthesis. King has cited both as prime influences on his style. Oliver (1969: 151) believes that *the influence of Walker on King was greater than that of the Delta players*. King has said: "T-Bone Walker should have been the world-wide symbol of the blues. T-Bone was sure-enough guru; I was just his disciple" (King 1997: 264). Both Bland and Milton also cite Walker as an influence, and Albert King cites both Walker and Lonnie Johnson.

Haralambos discussed the specific nature of the dual influence on King:

On amplified guitar, he [King] played single string runs developed from T-Bone Walker and Lonnie Johnson. King's style is more melodic than T Bone's, showing Lonnie Johnson's influence - Johnson is a particularly melodic guitarist. Both Lonnie Johnson and T-Bone Walker use ninth chords in their blues, a jazz influence, distinct from the majors and sevenths employed in country and Chicago blues. When B. B. King plays the occasional chord it is usually a ninth, and his guitar runs are played around a ninth chord, rather than playing minor notes against a major chord, a feature of Chicago blues (1974: 32).

It would seem that Haralambos and Shaw had compared notes. The former's *Right On* was published in 1974, the latter's *Honkers and Shouters* not until 1978, although from the acknowledgements it would seem that Shaw's book was also written in (June) 1974. In *Honkers and Shouters* Shaw says;

From a technical stand point, B. B. is today at the other end of the blues spectrum from the Chicago blues of Muddy Waters and Howlin' Wolf. Although he came with them from the Mississippi Delta, the influence of jazz-oriented bluesmen like T-Bone Walker

and Lonnie Johnson moved him in a fresh, advanced harmonic and melodic direction. Ninth chords are a staple of B. B.'s style instead of minor (blue) notes played against major chords (I, IV, V), as in the delta or country blues. King uses single string runs and jazz-blues riffs, making the instrument less percussive and more melodic (1978: 207-208).

For Berendt the significance of King is heard in his manipulation of sound, and is related to the development of the electric instrument:

It was King who fully realized the development that began with Charlie Christian: the guitar sound grew increasingly longer, was further and further abstracted from the instrument. Of course this development began in fact before Christian; It leads straight from the metallic chirpings of the banjo in archaic jazz, through Eddie Lang and Lonnie Johnson, who (still without electric potential) waged a constant battle against the brevity of their sounds, and via the saxophone style of Charlie Christian and the great cool guitarists of the fifties, to B. B. King - and from him... to Jimi Hendrix. This development has a single goal: the continuous, determined elongation and the related individualization and malleability of the sound (1984: 308).

If B. B. King is not primarily to be considered an innovator, having borrowed melodic material from Walker and Johnson, he did impart his own stamp on the blues by bringing together their diverse influences, or, as Keil puts it: "Part of the continued respect which a blues singer like B. B. King enjoys is due to his successful manipulation of the time tested formula in a style full of nuances and shadings that are distinctly his own" (1966: 98).

Guralnick, Keil and Berendt all collude that King is the pre-eminent influence on the development of blues guitar after 1945. For Guralnick King's role is central to the dissemination of an urban blues style because "... B. B. King, who learned at T-Bone's feet, exported that sound to the world..." (1982: 113-114). Keil believes that: "With the emergence and maturation of B. B. King, Jr. Parker, and Bobby Bland we have the models for nearly all contemporary blues forms" (1966: 68). Berendt has said that King's influence on later guitarists is so great that; "B. B. King is the father of all guitar playing in rock and popular music of the sixties and seventies" (1984: 307).

In the first decades of the twentieth century in the United States the relationship between the development of guitar styles and guitar design is a cyclical one: Through the demands of musicians, who needed to be heard especially in ensembles with louder instruments, new developments in instrument design were

implemented which increased the volume of the guitar. As a by-product increasing the volume also increased sustain, two aspects which, over several decades, gave rise to new developments in style. It was seen that for the first few years at least, in improvised performance newly created material presented in a single string melodic style was developed by a only handful of pioneering guitarists and seems, for the first few years at least, to have been instigated by one man.

Urban blues was seen to be stylistically different from country blues, and in the 1930s and 1940s various different regional urban styles evolved. Blues, like other musical styles, grew out of the acculturation in the United States, and was at first a black response to social conditions and may have also included a 'cultural memory' of African practices. Some of these aspects, later adopted by white musicians, led to the development of further new styles.

Improvisation occurs in the context of a model, in this thesis the formal structure of the twelve bar blues is examined. It was noted that in some genres the model may be a mode with melodic contours. It remains to be seen if that is the case with the melodic material of the blues guitar solo.

CHAPTER TWO

MUSICAL, PHYSICAL AND ANALYTICAL ASPECTS

2. 1. Musical aspects

The precise origins of 'blue notes' is open to question, but a 'blues scale' that incorporates these tones now exists in the literature as a theoretical construct and is used as an educational tool to 'teach' musicians how to play the blues. This concept is now too well established in pedagogic texts to be displaced. However, definitions of the blues scale vary and it may be seen that theory is not in accord with practice in the improvised repertoire. A concept of mode, which transcends that of scale to include tone weighting and melodic characteristics, may be more useful in considering blues melodic resources. Some scholars (notably in the jazz field Owens: 1974 and Kernfeld: 1981) have suggested that *characteristic improvised melodies of a repertoire, such as blues, can be analysed as short motivic fragments*. On the guitar tones are produced by the left hand fingers coming into contact with a string at a specific location the fretboard. In representing fragments drawn from a guitar solo a form of notation could be devised that depicts the layout of a sequence of tones as it appears on the instrument. This would be informative because the instrument is the interface between the performer's conceiving a melody and consequent sound that is produced.

In order to investigate the way an improvising guitarist articulates his musical conception the layout of the guitar fretboard will be considered and the melodic phrases of a blues improvisation will be examined for specific left hand gestural activity. Graphic notation will be shown that represents the sequential left hand fingering patterns that form the melody. An analytical overview will consider a methodology of defining a weighted blues scale derived from the practising guitarist and representing that scale on the fretboard.

2. 1. 1. Scale.

A scale can be defined as a series of tones arranged in a sequence, low to high, or high to low. The pitch content of any type of music whose pitches can be clearly defined can be represented as a scale. Dowling and Harwood state that: "Beyond providing a measure of melodic motion, the scale provides a cognitive framework that facilitates the remembering of the pitches of a melody. This is especially important in nonliterate cultures where the human memory is the only vehicle by which melodies are preserved" (1986: 91). They offer the following definition of the musical and psychological requirements of a scale:

1. discriminability of intervals,
2. octave equivalence,
3. a moderate number of pitches within the octave (usually about seven), and
4. the use of a uniform modular pitch interval (the semitone) with which to construct approximations of all the intervals of scales traditionally in use (1986: 95).

However: "... scale forms are in essence abstractions from 'real' music rather than themselves constituting that music. Neither the diatonic major scale nor the minor scales themselves constitute the stuff of pitch relations in music; they are *theories* about pitch relations in music" (Dowling 1991: 234). Frequently the scale is a "theoretical construct" (Nettl 1974: 12) used as a tool to aid in the description of a music, the tabulation of a scale being a consequent to the actual practice of music making. The value of these abstractions in the analysis of non-Western music is particularly debatable. "A scale is likely to be simply an arbitrary representation of pitch content that contributes little to an understanding of a given work" (Randel 1986: 728).

The significance of the concept of scale as a framework for improvisation varies between stylistic idioms, and even between performers. Furthermore, within a particular idiom, different emphasis may be placed on the importance of scales over a time period; with the growth of analysis and the subsequent upsurge of pedagogic texts, students of improvisation may be encouraged in the practice of scales. In John Mehegan's book on improvised piano, *Jazz Improvisation 1: Tonal and Rhythmic Principles* (1959), there is great emphasis placed on the use of arpeggios, the major scale and its modes for the novice improvisor. Similarly the Berklee College series of books *A Modern Method For Guitar* (Leavitt 1966) advocates a complete mastery of the twelve major scales at every fret position of the guitar fingerboard.

The use of scales as a basis for improvisation probably reached its zenith with the advent of the jazz rock idiom in the 1970s. In the transcriptions that the

jazz-rock guitarist John McLaughlin made of his own compositions: *John McLaughlin and the Mahavishnu Orchestra* he includes a “vocabulary of modes and synthetic modes. Suggestions of what modes to use and where to use them are found below the title of each composition” (1976: 6). These suggestions include directions such as: “1st bar - A \flat Super Locrian (E Pentatonic Minor may be interspersed), 2nd bar - B \flat Super Locrian (E Pentatonic Minor may be interspersed)” (p. 58). and “...the student is free to base the mode of his solo upon the pedal corresponding to his astrological sign” (p. 53). These pedals being derived, he claims, from Egyptian mythology. Only the bare ascending scale form is presented, with indication of neither note hierarchy nor melodic usage. Detailed examination of McLaughlin’s scale usage would probably reveal melodic fragments that form part of a lingua franca of the characteristic idiomatic performance within the jazz-rock idiom.

Ironically one of McLaughlin’s earliest influences was the Gypsy guitarist Django Reinhardt (Britt 1984: 55, Mongan 1983: 200) who, despite the fact that he used scale fragments and even on occasion complete two octave scales in his melodic improvisations, he reputedly asked the classically trained violinist Stefan Grappelli; “A scale, what is a scale?” (Hoefler 1966: 21). From this comment it is unclear whether Reinhardt was being tongue-in-cheek, ironic or whether he was genuinely unaware of theoretical descriptions of musicology.

As an aid to describing a musical form, then, scale may be a useful analytical construct, but have little meaning to a performer within particular genres.

2. 1. 2. Mode.

The term mode can have a variety of meanings that transcend the concept of scale. At one extreme mode implies a scale whose tones are subject to a hierarchy, and, at the other, mode may be defined by characteristic melodic types. As Dowling and Harwood (1986) put it: “A modal scale is created from a tuning system by imposing a structural hierarchy on a set of pitches. In its simplest form, this structure designates some tones as more important than others... and establishes dynamic patterns of expectation concerning where the pitches might not lead in a melodic sequence” (116).

The concept of mode, then, may contain three elements:

- A gapped scale or pitch collection, with a hierarchy of principle pitches.
- Melodic types and ornamental pitches.
- Emotive or extra-musical characteristics.

It is useful to consider two elements in relation to modal material:

- The relationship between melodic material and the theoretical construct of the scale.
- The learning method within the tradition.

In the classical music of India the concept of mode forms the basis of improvisational practice. The term *rag* in Indian music implies more than scale. *Rag* is, as Ravi Shankar describes: "... the melodic basis of Indian classical music on which the musicians improvise. Each *raga* has definite melodic qualities that distinguish it from all other *ragas*" (1968: 157). *Rag* "includes particular melodic phrases and expectations (especially cadence formulas)... " (Dowling and Harwood 1986: 118). Ascent and descent patterns may vary; the latter may be simpler, particularly when descent is involved in cadential patterns.

Viswanathan and Cormack state that a "... system of formulas distinguishes the melodic character of a raga from any other... It includes scale, the treatment of individual tones... phrases, and shape" (1988: 16).

Traditionally the ideal method of instrumental teaching in Indian classical music is by supervision of a guru. Emphasis is on melody, and the student begins with simple exercises known as *paltas*. *Palta* is not a scale but a melodic fragment which typically has a small range. *Sargams* are then learned, which are various compositions that are sung to the solfège. The student may also practise *tans* which are melodic phrases. The student may then embark on learning simpler *ragas*, and may spend many hours listening to, and, significantly, watching his guru in order to nurture the feeling for a particular *raga*. Thus melodic material is handed down between different generations of musicians and, furthermore, the specific physical movement patterns that produce the idiomatic melodic material can be learnt by the student directly from the teacher.

In a parallel to this Russell has said that, when in his teens, the jazz saxophonist Charlie Parker desired to emulate the pre-eminent saxophone players of Kansas City, especially Lester Young: "... just how, he was not certain. None gave lessons (1988: 43)... He had to see how jazzmen held their horns, worked their embouchures and used their fingers, and how they breathed" (44). Some of the local musicians would smuggle Parker into the Reno Club where he would hide in the balcony and "... remove his own horn from its case, adjust the neckstrap, and place his fingers on the keys. The reed would be in his mouth but no sound would come out. Charlie wasn't putting any air into the horn. He was plaing along with Lester only in his head, his fingers moving on the keys the way Lester's fingers moved..." (56)

Most practising Islamic musicians of the middle-East are not concerned with scale. Melody is paramount and although a mode may be represented as a scale there is also the implication of a hierarchy of pitches and specific melodic contours, motives or interval sequences, along with complex forms of ornamentation.

The Arabic word *maqam* implies both style and tradition. Two different modes may share the same tonal material, initial and final tone, but be completely different in character.

The Turkish term *makam* can be described as a set of compositional rules that govern modal ascent and descent patterns, melodic flow, initial, final and other prominent tones, and range. Stokes quoting from the Turkish theoretician Ziya Gökalp's book *The Principles of Turkism* says: "Turkish music consists of melodies, unfettered by rule, system and technique..." (1992: 50). In performance a modal framework is revealed through a number of melodic passages of various lengths constructed around a central tone which acts as the nucleus of the phrase. In the *makam*, minute inflections of pitch may form the distinction between different modes. The theoretical concepts become questionable if they ignore the inflections that are used for expressive purposes in a particular *makam*. Another distinguishing feature of a mode in this repertory is that if a melody extends beyond an octave it may not use the same tones in the upper octave.

Like *raga*, *maqam* and *makam*, the Persian *dastgâh* is associated with particular melody types with its own scale hierarchy and cadence formulae. Tones are grouped together in melodic fragments which are frequently contained within the range of a tetrachord or pentachord. A performer asked to demonstrate a *dastgâh* will not play a scale but one of its melodies.

The blues scale reveals little about blues melody. It is possible that there is a modal basis to blues and that further musical information, tone weighting and melodic characteristics, would be helpful in considering a blues performance.

2. 1. 3. Blue notes and the blues scale.

The two terms blue note and blues scale are frequently employed with little regard for the actual practice. It is one of the aims of this thesis to examine the meaning of blue notes and blues scale in the repertory of two practising musicians.

It is believed that usage of the term 'blues' is derived from the mid-sixteenth century term 'the blue devils' that was used to describe a mood of melancholy or depression (Oliver 2001: 370).

Blues elements are a vital ingredient of both jazz and blues. Writing on the use of blue notes Keil suggests that:

It is this characteristic more than any other that unites the single-chord drones and the vocal moans of John Lee Hooker and Blind Willie Johnson on the primitive end of the blues spectrum with the modal improvisations of Miles Davis, John Coltrane, and other leaders of the jazz avant-garde (1966: 53).

Blues elements have been present in jazz from the earliest times. Robinson notices that the layout of an instrument may have influence on blue note usage saying that:

At first they were apparently associated with particular pitches (notably C#-D in the key of B \flat) and were not transferable, which probably indicates their dependence on certain characteristic instrumental fingerings; later as jazz musicians gained greater fluency in remote keys, blue notes could be heard on other pitches as well" (1988a: 120).

Blue notes are commonly described (i.e. in Robinson 1988a: 120) as microtonally flattened third and seventh degrees. Occasionally other degrees such as the flattened fifth are cited. Blue notes are also described as neutral pitches between the major and minor third and seventh degrees, but the intonation is not fixed, and can vary depending on the performer and the performance. Inflection of tones is also common.

For Kubik these definitions are unsatisfactory. Referring to the term blue note he says:

By this term normally two tones are understood, variously written as B \flat and E \flat in relation to the Western diatonic scale based on C. These two notes seem to be notoriously unstable and somewhat superimposed on the Western major scale like "aliens" (1999: 118).

Kubik is also unhappy with Robinson's definition of blue notes as microtonally lowered scale degrees, suggesting that musicologists who have worked in Africa do not perceive blue notes in this manner, but instead the

... vocal line is an integrated, patterned whole, without any particular tones having special status. In spite of their regular use for accompanying the blues and early forms of jazz, the three

common Western chords appear to be the real "aliens" ... (1999: 118 - 119).

A number of diverse theories have grown up with regard to the evolution and definition of blue notes. A $B\flat$ tone when sounded against a G major chord is a dissonance. It is not a blue note when isolated and taken out of context. Therefore, the definition, behaviour and function of blue notes needs to be further examined.

The origins of the use of blue notes is open to speculation. For Kubik "The literature on the blue notes and their possible origins is abundant. Many of the hypotheses are clearly off track, while some others contain worthwhile hints and, in a sense, a grain of truth" (1999: 123). Kubik goes on to say that he believes that blues scalar patterns are derived from the west Sudanic belt, and their origin "must be sought in speech. They do not derive from experimentation with instruments" (1999: 129).

It has been suggested that blue notes derive from a friction between the European harmonic system and the African melodic line. Borneman believes that:

Although indigenous variants of the diatonic scale have been developed and preserved in Africa, modern West Africans who are not familiar with European music will tend to become uncertain when asked to sing the tempered scale. This becomes particularly obvious when the third and seventh step of the diatonic scale are approached. The singer almost invariably tries to skid around these steps with slides, slurs or vibrato effects so broad as to approach scalar value (1978: 7).

Kubik prefers to think of these tones being derived from African "equiheptatonic tuning systems", saying:

In the African equiheptatonic systems the octave is divided by ear into seven approximately equal parts... The equiheptatonic or "neutral" third is mathematically... 342.8 cents... in practice it will fluctuate anywhere between ca. 320 and 360 cents" (1999: 120).

The aim here, however, is not to examine the origins of blues scale but rather to examine the way that it is interpreted in the melodic single string guitar framework of two musicians who had already become acculturated and adopted some of the syncretised language onto the instrument.

A survey of definitions of blues scale indicates that there is disagreement amongst commentators. Pass (1977: 22) and Lucas (1978: 4) present a pentatonic

scale. (The term pentatonic denotes a scale of five steps in the octave which commonly comprises three seconds and two thirds which is often anhemitonic). Bailey and Driver also suggest that: "Many blues melodies use a pentatonic blues scale with blues notes. This scale could be configured as root, neutral third, fourth, fifth, and neutral seventh" (1992: 64). These tones would roughly correspond to C-E \flat -F-G-B \flat (relative to a C tonic). Eschete (1980: 48), Gamble (1989: 4) and Keller (1998: 83) add the flattened 5th (G \flat) to this pentatonic layout. Grigson suggests that: "It is perhaps best to regard the blues scale as consisting of two distinct pentatonic scales, the major and the minor, plus the flattened 5th as an important additional tone" (1988: 59). Thus he presents the blues scale as C-D-E \flat -E-F-F \sharp -G-A-B \flat .

Kubik criticises the pentatonic definition of the blues scale saying: "This would mean that for some unexplained reason such pentatonic scales were composed of three stable intervals and two unstable intervals" (1999: 122).

Kubik goes on:

In many African cultures it has also been observed that two notes, even up to a semitone apart in repetition, are conceptualized by the singer as one and the same toneme. This variability concept has been retained in many blues. This explains the auditory tolerance of microtonal deviations from the pentatonic pitch framework in patterns of ornamentation. Such deviations can veil, but do not eliminate, the pentatonic scaffolding" (1999: 87).

Robinson suggests that the blues scale as it is used in jazz differs from that used in blues. The former, he says, comprises "the diatonic scale to which the inflected third, fifth, and seventh degrees may be added to impart a blues flavour" (1988a:120). He also feels that the blue fifth degree is rare in blues but was, instead, an invention of jazz performers. It would seem again that theory and practice are often at odds with one another: Owens in his thorough analysis of Charlie Parker suggests that:

Some writers on jazz have made much of bop musicians' use of the diminished fifth scale degree. With the advent of bop, this note supposedly became as common as the minor third and minor seventh scale degrees, the other blue notes. The evidence suggests that, at least in Parker's case, the importance of blue notes has been overstressed. His application of the traditional "blue third" is rare, and he never used the "blue seventh" except when it functioned as the blue third of the dominant chord. Only the blue fifth occurs often enough to be included in this discussion of his most common motives, and among this group it is comparatively rare. However,

he tended to play it in an attention drawing way, which may explain earlier writers' preoccupation with it (1974: 23).

The use of the flattened fifth will be examined below in the context of the improvisations of Johnson and Walker.

Theory, in relation to the study of improvised music, is the exposition of the principles of performance practice. Kubik observes that Deep South blues singers do not refer to blue notes unless they have been exposed to formal training in some form, and goes on to say that blue notes are "... not originally an intracultural concept." but the term was "... introduced by various jazz musicians and writers about jazz, who began to use it by the 1920s... in order to "explain" their music in Western terms. (1999: 123). Kubik goes on to say that: "Thus, the so-called blue notes are simply part of the blues singer's total pitch repertoire. Their existence as differential cognitional units is only generated through comparison with an extrasystemic parameter: the European diatonic scale." (1999: 123)

Furthermore, there may be discrepancies between theory and practice. It seems evident that the abstract concept of "blues scale" means as little to a blues performer as scale does to *raga*. To play the blues scale (in whatever definition we accept) in an ascent and descent pattern is not to play the blues. In order to define the blues scale as a mode it is necessary to examine the melodic basis derived from the performance practise of individual blues improvisers.

2. 1. 4. Motive.

The *Oxford English Reference Dictionary* defines the term motif as a musical "figure", and the word motive as "a motif in art literature or music". Both the *Penguin Dictionary of Music* and *The New Grove Dictionary of Music* suggest that the French derived term motif is best avoided in musical discussion because it is associated with three different meanings: figure, subject and *Leitmotiv*. The *New Grove Dictionary of Music* prefers the use of the term 'figure', this being defined as the exact counterpart of the German *Motiv* and the French *motif*. To avoid confusion with these terms the word motive has been adopted in this thesis.

A motive is a short, complete, rhythmic, harmonic or melodic idea which retains a distinct identity, even when it is subject to some form of elaboration. A motive can comprise as few as two tones. Conversely, longer motivic forms may be sub-divisible into smaller cells. Motives can be the basic ingredient in a complex texture or even the basis of a complete composition. It may also be found that motives are associated with particular fingering strategies on the instrument on which they are conceived.

Dowling and Harwood observe "A single note taken out of context is meaningless, and it gains meaning only from its contextual relationship with other notes" (1986: 159). Tones selected by the performers under consideration here gain meaning and coherence in the context of longer phrases.

Some methods of analysis of musical forms seek to demonstrate that organic coherence is derived from small component units of composition. These units have been variously referred to by different theorists as; formula, idea, figure, gesture, motif, (Kernfeld 1988a 558), motive (Schuller 1968, Owens 1974), cento (Randel 1986), *nome* (Ferretti 1934), lick (Witmer 1988), matrix (Van Der Merwe, 1992), cell, fragment, and even 'tool kit' (Reck). These terms are largely synonymous.

Some writers are adherents to a theory that music may be composed from variously titled fragments. Ernest Newman wrote of Beethoven that "a great deal of his work can easily be shown to be a series of variations upon some ten or twelve protoplasmic cell-formulae;" and went on, "... the same holds good of all other composers". To this Van der Merwe adds: "This is true, and it is all the truer of music which is content to follow traditional lines and aims for neither novelty nor variety" (Van der Merwe 1992: 93). In musical styles, particularly those where innovation is not an important aspect, component elements can be readily identified and catalogued.

In the analysis of jazz improvisation Hodier (1975: 145-153) identified four types of improvisation which were taken up by Kernfeld, Schuller, etc. They are;

- Paraphrase is an ornamental form in which the improvisation retains elements of pitch, rhythm and contour of the melody on which it is based.
- Chorus phrase is a variation form where the material is divorced from the pre-composed melody. Instead pitch selection is derived from harmony and harmonic rhythm.
- In thematic improvisation, a few motives taken from the theme are alluded to and combined, or varied by devices such as diminution, or rhythmic displacement.
- In motivic improvisation ideas develop from a central motive or group of motives.

Kernfeld (1981) suggests that in certain forms of improvised music a motive may appear without modification as an isolated, inserted response to a particular chord or chord progression. If such a motive is frequently repeated in the repertoire of a musician, it may become identified as a cliché peculiar to the improvisations of that individual performer, or the 'common property' of a particular idiom or style.

Moreover, a motive may be embellished, transformed, developed, modified, transposed or combined with other melodic material.

'Lick' is a term that is commonly used by practising jazz musicians to refer to this type of motive.

Many jazz musicians have at their disposal a repertory of licks, some of their own invention, some borrowed from other players, and an improvisation may be little more than the stringing together of a number of such fragments. In some styles (e.g. slow blues) and for some ubiquitous chord progressions (e.g. ii - V - I) a common stock of licks is in circulation. (Wilmer 1988: 41)

Kernfeld says that formulaic improvisation is the commonest kind in jazz of all styles.

Particular musicians and groups often create a repertory of formulas, (their "licks") and draw on it in many different pieces. The essence of formulaic improvisation is that the formulas do not call attention to themselves, but are artfully hidden, through variation, in the improvised lines; the challenge presented by this type of improvisation is to mould diverse fragments into a cohesive whole (1988b: 558).

Kernfeld draws comparisons between the improvisations of Charlie Parker and the complex melodic lines of John Coltrane saying "... Like Charlie Parker, Coltrane improvised rapid bop melodies from formulae: but unlike Parker he drew on a small collection of formulae" (1988b: 236). He goes on to say that on Coltrane's 1959 improvisation on 'Giant Steps' "Rigid, repetitious eighth-note formulae lay just beneath the surface" (236).

It can be seen from the above quotations that although a number of musicologists recognise the use of motives as an important aspect of improvisation, little analytical work of specific bodies of work has been undertaken. In relation to a number of transcriptions of improvisations on the jazz standard 'Body and Soul' Kernfeld says: "In none of these cases are the characteristic formulas for the musicians concerned indicated: such identification would require for these soloists... careful and detailed analysis" (1988a: 558).

Porter (1983) has made a study of John Coltrane's dissonant lines to reveal underlying motivic elements. He suggests that the use of motives has a functional element in improvisatory practice, in that they are used to negotiate a particular chord, sequence of chords, or a cadence. He draws attention to the fact that motives

represent fingering patterns on the instrument which are familiar to the performer, that allow for a smooth connection of ideas. Porter goes on to suggest that each performer draws on a common fund of motives that are in circulation, to which he adds his own to form his repertory.

There has been reference thus far to a 'common stock of licks' and a 'common fund of formulas', but so far there have been no musical examples nor any indication as to their origins.

Thomas Owens' (1974b) thorough analysis reduced Charlie Parker's recorded output to around 100 motives, some of which he traces to Lester Young. Others, he suggests, were originated by Parker himself, but became common property of the bop style. Owens claims that

Every mature jazz musician develops a repertory of motives and phrases which he uses in the course of his improvisations. His 'spontaneous' performances are actually pre-composed to some extent... the master player will... continually find new ways to reshape, combine and phrase his well practised ideas. An awareness of these melodic ideas allows the listener to follow a solo with great insight into the creative process taking place... each piece contains much that is familiar. But no two choruses are exactly alike, even among the hundreds of blues choruses that are preserved. Each new chorus provided him an opportunity to arrange his stock of motives in a different order, or to modify a motive by augmenting or diminishing it, by displacing it metrically, or by adding and subtracting notes. Such was the nature of improvisation to Parker, just as it probably has been to every mature improvising artist in any musical tradition around the world. No-one could create totally new phrases at that speed. Many of the components of those phrases must be at the fingertips of the player before he begins if he is to play coherent music (167).

Jeff Pressing endorses this view:

Nuances in continuous improvised performance based on self monitoring are probably limited by error correction times of about 100 ms, so that speeds of approximately 10 actions per second and higher involve virtually exclusively pre-programmed actions. An informal analysis of jazz solos over a variety of tempos supports this ball-park estimate of the time limits for improvisational novelty (1988a: 135).

Gunther Schuller's view is that: "All jazz players, of course, have such typical motivic figures at hand, ready to use in any given situation. They form... the backbone of their style" (1989: 573n). Schuller (1958) systemized a concept for analysing motives in a jazz improvisation of Sonny Rollins.

It is clear that Owens recognises that the use of fingered patterns is influenced by the physical layout of the instrument: he makes the statement that "G minor-seventh is the most common [ascending arpeggio in Parker's improvisation], perhaps because notes in the E-flat-major scale are particularly easy on the alto saxophone" (1974a: 17). He does not, however, substantiate this in his analysis with further data.

Innovation is less prominent in the idiom of blues than it is in jazz and an abundance of clichés have entered the blues idiom. Blues clichés also abound in jazz, where they retain their identity as inserted motives from performances in the mid-1920s to bop and beyond.

Not all analysts are, however, adherents of the motive theories of improvisation. Johnson-Laird says:

A common misconception about improvisation is that it depends on acquiring a repertoire of motifs - 'licks' as they used to be called by musicians - which are then strung together one after the other to form an improvisation, suitably modified to meet the exigencies of the harmonic sequence. There are even books containing sets of 'licks' to be committed to memory to aid the process. Surprisingly, the error has also been perpetrated by theorists. In characterising jazz improvisations, Ulrich (1977) writes: 'Sequences of motifs are woven together to form a melody. Rather than constantly inventing new motifs, the musician modifies old ones to fit new harmonic situations.' ...Why can one be confident that the 'motif' theory is wrong? There are three reasons. First, someone has to invent the motifs. Second, although most musicians have certain phrases - often a rhythmic pattern rather than a melodic motif - to which they are addicted, an analysis of corpora of the musician's improvisations yields that there are many phrases that occur only once... Third, the labour of committing to memory a sufficient number of motifs to guarantee the improvisation of complete solos is altogether too large to be practicable (1991: 292-293).

Of the three observations that speculate that the motive theory is 'wrong', the first does not pose a problem. It is quite probable that analysis of a style would indeed reveal that a given motive was the invention of an individual. That motive may then enter into the corpora of motives within a genre. Secondly, it is hoped that

it will be revealed by this analysis that recurrent musical material occurs as a result of tactile fingering strategies, rather than being derived from either 'rhythmic pattern' or 'melodic motif'; indeed, it will be seen that movement patterns that are recurrent are not inhibited by rhythmic constraints. With regard to the third observation it is hoped that this analysis will go some way towards examining what is achieved by a musician's continued practice and experience that enables him to retain coherence in his improvisations, along with identifying elements of the performer's 'individual code': that is those elements by which a knowledgeable listener is able to identify a particular performer.

Johnson-Laird does not, however, offer any other ideas with regard to the question of improvisation. He goes on to say: "How does a bass player choose which note to play next? No-one knows the answer..." (1991: 313). Furthermore, having attempted to discredit the motive theory he then goes on: "Certainly, there are motifs... but, as I have explained, this cannot be the whole story" (314).

2. 1. 5. Style.

Different stylistic types that can be discerned within the blues genre were discussed in chapter 1. Each performer within the genre is likely to have elements that are idiosyncratic to his personal, individual style, because within the idioms of blues and jazz, musicians place a high value on 'individual code'; that is, the factors which make an individual performer instantly recognisable to the knowledgeable listener. These factors include melodic shape, timbre, attack, and vibrato, all of which are produced by the hands-on contact with the instrument. Some of these aspects will be considered in relation to the two main subjects, Johnson and Walker, and also traced in their influence on later soloists.

In defining style Dowling and Harwood characterise 'invariants' as:

... structural constancies underlying surface change in local pattern features... Such invariants across sets of pieces constitute what we mean by a style. Experience with pieces in a particular style facilitates the listener's comprehension of the stylistic invariants of a new piece (1986: 161).

They cite as an example that... "The musically dissonant chord is one that requires resolution. Psychologically, such "requiredness" depends upon the listener's knowledge of the style and the expectancies that knowledge generates" (87). Or as Sundberg and Lindblom put it... "acquaintance with a musical style allows listeners to hear what is and what is not in accordance with a given musical style" (1991: 248).

The growth of a musical style is frequently an evolutionary process, with novel behaviour being gradually added to the invariants... "musical styles often develop step by step. New effects are achieved simply by adding some novel variation to already well-known effects" (Sundberg and Lindblom 1991: 264). Or else novel actions may be built by "distorting aspects of existing ones" (Pressing 1988a: 162).

The introduction of novel events will be examined here by analysing the output of Lonnie Johnson over a long time period through which it can be observed that small idiosyncrasies are introduced into the improviser's repertory that are later either developed or discarded.

Bailey and Driver indicate that atypical movement patterns may give rise to novel music: "Innovations have often been made in terms of discovering new ways to move on the instrument" (1992: 67), and "... Creativity in music may often consist of deliberately finding new ways to move on an instrument..." (Bailey 1985: 257).

But the development of novel actions takes place within the confines of what is culturally acceptable. As Murdock says: "... with all his creative abilities, the individual is born and reared in a certain cultural environment, which impinges upon him at every moment in his life." (Sachs 1962: 138). For Nettl this means that the creative musician has a: "...need to balance "doing your own thing" with sticking to the rules" (1998: 16).

During the course of this analysis innovations can be shown to have been introduced over time in the improvisations of the various performers. Enough of the stylistic rules are retained that the end result is still, however, defined as a blues performance, while at the same time the boundaries are being stretched.

2. 2. Physical aspects.

The guitarist Zeke Turner, in his 1947 improvisation on the Hank Williams' recording of 'Move It On Over', (a twelve-bar blues structured song) played the following incomplete chromatic line in response to an accompanying E dominant seventh chord.

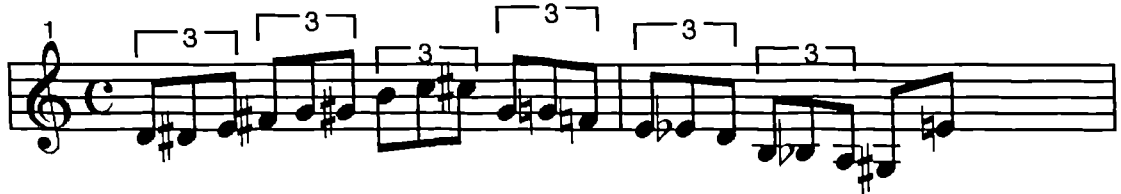


Fig. 2-1 Zeke Turner, 'Move it on Over' melodic formula.

There is no clue in this transcription as to why the performer has selected these particular tones in relation to the E7 chord; no indication as to why he had chosen to omit the F natural after the chromatic fragment of the opening triplet, or the two tones A and A# after the second triplet, or why the tones of C - C# are included as the climactic tones on the third beat of bar one, but omitted in the lower octave after the first triplet of bar two. Furthermore, it may seem arbitrary within the context of a blues improvisation to omit the \flat 5th (B \flat), which is frequently designated a 'blue note', and yet to include the natural 7th degree (D# / E \flat) in both ascent and descent. The latter would not normally be associated with the blues scale.

One may postulate that it is improbable that the performer, during the course of his improvising, perceived his improvisation as notes on a five-line staff, or even to think to himself "the rhythm section are playing an E dominant seventh chord, I'll begin my improvisation on a D natural, followed by a D sharp,..." etc. As he is working within an oral tradition it is feasible, although unsafe to assume, that the performer is not musically literate. Besides, at the speed at which this tone sequence is accomplished, there would be insufficient time for the performer to pursue such a thought process. Kubik states:

But here, as always in the study of cultural systems, we have to keep in mind that descriptions of African and African-American music with the vocabulary of Greek-derived terms such as "rhythm," "melody," and "harmony" are intrinsically flawed (1999: 107).

Instead of presenting data in traditional Western music notation, which may not be the most informative it may be advantageous to find a method of transcription that helps to provide an insight into the way that a performer conceives his ideas on his instrument within the course of an improvisation.

2. 2. 1. Spatial thinking.

The physical act of performance is reflected in the structure of improvised music and pitch selection. There is a relationship between a musical genre and fingering patterns which are inherent on the instrument. The analysis here deals with single sting melodic guitar improvisations on a twelve bar blues model and in considering this it is useful to take into account how the musician perceives the fretboard.

On many musical instruments sound is manipulated, to varying degrees, by the fingers. The way that an instrument is assembled is therefore liable to reflect this. With reference to the construction of the flute, Sachs says that the placement of the holes needs to allow for ease of fingering. But this has ramifications: "The easiest fingering distance, not too long and not too short, is about an inch - a fact that shifts the whole question from the visual, tactile, and acoustical to the metrical field" (1962: 100).

In the production of music two physical elements are interconnected:

- The surface of the musical instrument itself.
- Human movement patterns.

The outcome of the combination of these leads to

- the music that is produced.

Or, as Bailey puts it:

... the activity of music making involves patterned movement in relationship to the active surface of a musical instrument... Human movement is the process through which musical patterns are produced: Music is the sonic product of action. Looking at things in this way opens up two possible lines of enquiry. Firstly, there is a need to study the way that musical patterns may be represented cognitively by the performer as patterns of movement rather than patterns of sound. Secondly, since the motor apparatus and its control mechanisms (including those of conscious control), which

together constitute the sensorimotor system, have certain intrinsic modes of operation, we need to consider the extent to which the creation of musical structures is shaped by sensorimotor factors (1985: 237).

This viewpoint is further embellished by Bailey and Driver:

Research on plucked lutes with contrasting layouts of note positions on the finger-board has shown the way the human body is organised to move is a crucial element in the structuring of some kinds of music. A musical instrument is a type of transducer, converting patterns of body movements into patterns of sound. The physical layout of an instrument imposes certain constraints on the way it is played, favouring movement patterns that are, for ergonomic reasons, easily organised on the spatial layout (1992: 57).

The layout of the guitar can be perceived as a grid. Bailey and Driver define this layout as a “tiered array”. This structure opens up the possibility of melodic movements that cross string sets, as opposed to a linear approach, that is, up and down a single string. The former is a two dimensional manner of thinking, as opposed to the one dimensional motion that is employed on some plucked lutes.

The Greek bouzouki provides an interesting example. The original bouzouki had three pairs of strings typically tuned to D-A-D. On this arrangement the performer would primarily use the highest pitched string for linear melodic movement, and the lower strings for a drone accompaniment. When a Greek guitarist Hiotis took up the instrument he requested the famous Athenian bouzouki maker Zouzeif to incorporate a fourth pair of strings that would allow the performer to tune the instrument like the top four strings of a guitar. Holst describes the bouzouki as “Greece’s answer to the electric guitar” (1975: 59). However, as much of the idiomatic melodic repertoire of the bouzouki is derived from the older instrument linear movement persists on the newer instrument.

Furthermore, it is pertinent to consider that although the bouzouki and the guitar have related tunings and physical structures, if one were to compare the melodic aspects of a *rembetika* performance with that of a blues solo the sequence of tones that are characteristically produced would be very different. The writer demonstrated some guitar derived blues cadential figures to the London based bouzouki player Lennie Costa who quickly assimilated the phrases and incorporated them as ‘novelties’ into his improvisations. These phrases were unorthodox enough within the idiom that they were commented upon by other Greek musicians.

The arrangement of the tones on the guitar fretboard provides the performer with a framework upon which musical activity is planned and executed: "The hypothesis that this arrangement encourages spatial thinking suggests that musical patterns are remembered and executed not solely as aural patterns but as sequences of movements" (Bailey and Driver 1992: 61-62).

Bailey said that:

For the left hand, the frets on the instrument that have to be stopped constitutes a set of target positions. These might be located visually, kinaesthetically, or tactually... movement patterns are planned and experienced in relationship to this internal representation of the fretboard's spatial properties (1985: 252).

The layout of scalar material and melodic patterns can be perceived visually by the performer on the instrument. Russell believes that the visual is the strongest form of memory, saying: "Visual images are generally much better remembered than words. So much so that visual recognition is practically perfect" (1979: 114).

As Sachs observed: "The instrumental impulse is not melody in a 'melodious' sense, but an agile movement of the hands which seems to be under the control of a brain center totally different from that which inspires vocal melody" (1962: 110). Melodic movement is influenced not only by considerations of the melody itself but also by considerations of finger movement. Indeed, melodic invention may be, to some extent, either impeded or facilitated by finger movement. A good example of the latter is found in the improvisations of the Belgian born Gypsy guitarist Django Reinhardt, who re-learned the guitar after losing the use of two left hand fingers in an accident, as discussed at 2. 2. 3. below.

The implication under examination in this thesis is that there is a relationship between musical idioms, notably jazz and blues, in which the guitar plays a prominent role and idiomatic melodic patterns inherent on the fretboard of the instrument that are readily accessible beneath the fingers of the performer. This reveals a chicken and egg situation whereby questions can be raised such as whether "the instrument shapes the music, or is selected because it fits the music... The former... shows that new music may arise from new ways of moving in relation to the instrument" (Bailey and Driver 1992: 58).

The suggestion from the above discussion is that "... movement processes are credited with a much more important role than hitherto thought in giving the sonic product a patterned and coherent structure" (Bailey and Driver 1992: 59).

This research suggests that the relationship between human movement and the physical layout of an instrument is a vital component in the creation of musical improvisation. In order to form a comprehensive analytical model this aspect needs to be considered, particularly in relation to improvised music.

The twelve bar form as a model was discussed in chapter 1.2 above. Nettl has said that a model:

... consists of a series of obligatory musical events which must be observed, either absolutely or with some sort of frequency, in order that the model remain intact (1974: 12).

He goes on to say that an “individual musician establishes a personal practise” (Nettl 1974: 18), so that performance of a model by one musician will vary less than the same model performed by different musicians.

In many societies the model is governed by implicit rules. Compositional elements may be derived from improvisational practice. In some genres, such as the Indian *raga*, it is difficult to distinguish between composition and improvisation. In North Indian music improvisation is of prime importance. A sitar player can spend many years practising traditional models (*alankar*, *palta*) so much so that his eventual spontaneous “improvisation” will probably contain fragments composed earlier.

Similarly, an approach to the teaching of improvisation in jazz is to set out patterns and models of riffs, or motives, such as those by Coker (*Improvising Jazz*, 1964, *The Jazz Idiom*, 1975, and *Patterns for Jazz*, 1970) or to present different motives to the student by extracting common elements employed in improvised solos.

Nettl describes improvisation as: “The creation of music in the course of a performance” (1986: 392). But the degree of spontaneous creativity that occurs in the course of an improvisation is open to question and will be examined below. An aspect of improvisation can be the structuring of a solo from pre-practised hand movements. Pressing believes that in order to develop a theoretical understanding of improvisation three factors need to be examined: “how people improvise; how people learn improvisational skill; and the origin of novel behaviour” (1988a: 152).

Pressing states that improvisation includes the following components:

1. Complex electrochemical signals are passed between parts of the nervous system and on to the endocrine and muscle systems;

2. muscles, bones, and connective tissue execute a complex sequence of actions;
3. rapid visual, tactile, and proprioceptive monitoring of actions takes place;
4. music is produced by the instrument or voice;
5. self-produced sounds, and other auditory input, are sensed;
6. sensed sounds are set into cognitive representations and evaluated as music;
7. further cognitive processing in the central nervous system generates the design of the next action sequence and triggers it.

- return to step (1) and repeat - (1988a: 130).

The steps are reduced to three stages: input (sense organs), processing and decision-making (central nervous system), motor output (muscle systems and glands).

Pressing goes on to say: "It is possible to speculate that skilled improvisers would, through practice, develop general patterns of neural connections specific to improvisational motor control" (131).

Movement in improvisation takes the form of templates which are built up by practise, leading to a knowledge of results. But a degree of creativity rather than a habitual or mechanical reproduction of musical material is evident in a skilled improvisation. Vital components of improvisatory skill developed by practice are: adaptability, efficiency, fluency, flexibility, and expressiveness, even within the constraints imposed by stylistic and cultural boundaries. Bailey concluded his article "Music structure and Human Movement" by saying:

If the study of music and cognition is to proceed from the culture specific to the universal, then a wider approach must be adopted, one that includes recognition of the possibility that music may be as much a motor event as a sonic event, as well, of course, as a social fact (1985: 258).

This aspect, notwithstanding Bailey's writings, has been infrequently addressed in analytical methods. Schuller is one of the few analysts that has drawn attention to the role played by motor events in the creation of improvisation. Schuller defines jazz guitarist Charlie Christian's playing by saying;

... we discover certain recurring traits and note patterns that bind his solos into a coherent continuity. We also discover that

Christian's idiom is essentially a very conservative one... he breaks no new ground harmonically or rhythmically (1989: 571).

Schuller remarks that Christian imparts a blues sensibility to his recording of 'Stardust', playing a solo which is predominantly chordal, and goes on to say;

Note that these sliding chordal effects are uniquely guitaristic, achieved by sliding the fingers (three in this case) in parallel formation... It is a device natural to the guitar, in that the chord voicings lie well in the left hand, corresponding closely to the tuning of the guitar's three upper strings. (Such sliding parallel shapes had, of course, been used to fine effect, either in thirds or triads, by Hawaiian-style guitarists for at least a decade, and eventually became the instrument's ultimate cliché device, whether in Hawaiian style groups or in commercial Nashville country bands.)... Christian tops off the phrase with a graceful arpeggio up to high G. This too lies beautifully in the hand, a figure beloved by guitarists and one which, with its characteristic final leap up a fifth, Christian used in endless variants, both harmonically, as here, and linearly in hundreds of other solos (1989: 568-569).

Schuller makes similar observations in his analysis of Christian's solo on his recording of 'I Found a New Baby': "This type of figure... lies well in the hands of guitarists and has in addition to its linear shape a strong harmonic implication, a duality Christian knew very well how to exploit" (1989: 573). Three of Christian's motives as identified by Schuller (1989: 569-575) are shown here.



Fig. 2-2. Charlie Christian motive a.



Fig. 2-3. Charlie Christian motive b.



Fig. 2-4. Charlie Christian motive c.

It is unfortunate that Schuller has restricted himself to Western notation for his examples as this does not aid the elucidation of his claims. The fundamental problem being that any single tone, as will be seen below, can be realised in as many as five different locations on the guitar fretboard.

2. 2. 2. The guitar layout.

The standard guitar has six strings, tuned to E-A-d-g-b-e', and 21-23 metal frets, giving almost a full four octave range. The tuning of the guitar is in perfect fourths except for a major third between the G and B strings.

A form of graphic fretboard notation is used in this analysis. This is designed to show the location of the performer's left hand fingers on the grid representation of a guitar fretboard. Thus the relationship between the fingers and the instrument, because what "falls beneath the fingers" is central to improvisation. The headstock

of the guitar is to the left of the diagrams, and the lowest string on the diagram is the lowest pitched string of the guitar.

It could be said that, almost more than any other type of instrument, the construction of fretted lutes provides the performer with a particularly visual manner of perceiving his instrument; he can retain a mental representation of the physical arrangement of the guitar fretboard as a grid, as shown in figure 2-5, with the strings forming a horizontal axis, and the frets a vertical axis.

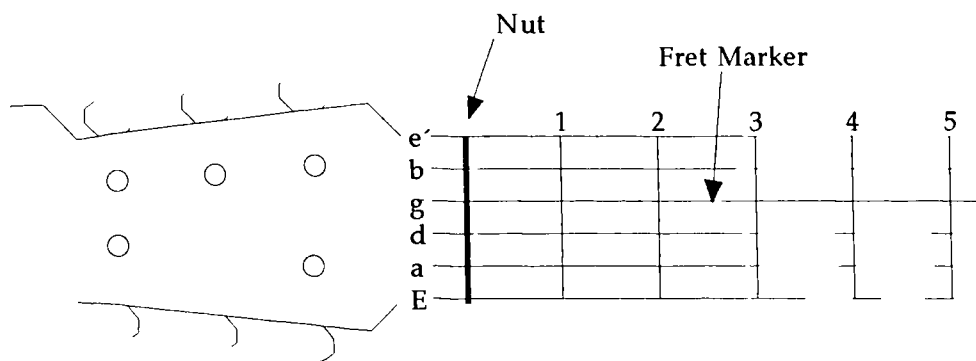


Fig. 2-5: The guitar layout.

With this cognitive framework in mind the improvising guitarist need not think in terms of tones, or even key, instead he can think entirely in terms of fingered, geometric shape.

In order to comprehend this layout, the practising guitarist may mentally reduce the fretboard to 'positions'. These positions are chord and scale shapes that lie across the fretboard within reach of the left hand fingers. 'Position' on the instrument is generally defined by the fret number at which the index finger is located. The guitar is primarily played by transverse motion, with linear motion being employed to connect different positions.

2. 2. 3. Chord voicings.

There are five 'open position' major chord shapes on the guitar. That is, chords which are available by the nut that include the use of open strings. These are namely the major chords of C, G, D, E and A. The voicings for these are shown in figure 2-6.



Fig. 2-6. Five open position chord forms available on the guitar.

These same chords are shown on the guitar notation at fig. 2-7 as they are fingered on the guitar. Left hand fingers positions are indicated by black and white circles on a fretboard grid. The white circles represent the root notes. It can be seen that each chord form has a unique layout of root notes. During the course of the analysis motivic material will be seen to be generated in a position that is relative to one of the five shapes and the root note markers will act as a visual aid in discerning which is the basic underlying triadic chord shape. The x's to the left of the diagrams are strings that are not sounded. The voicing for each chord can be seen to the right of each diagram.

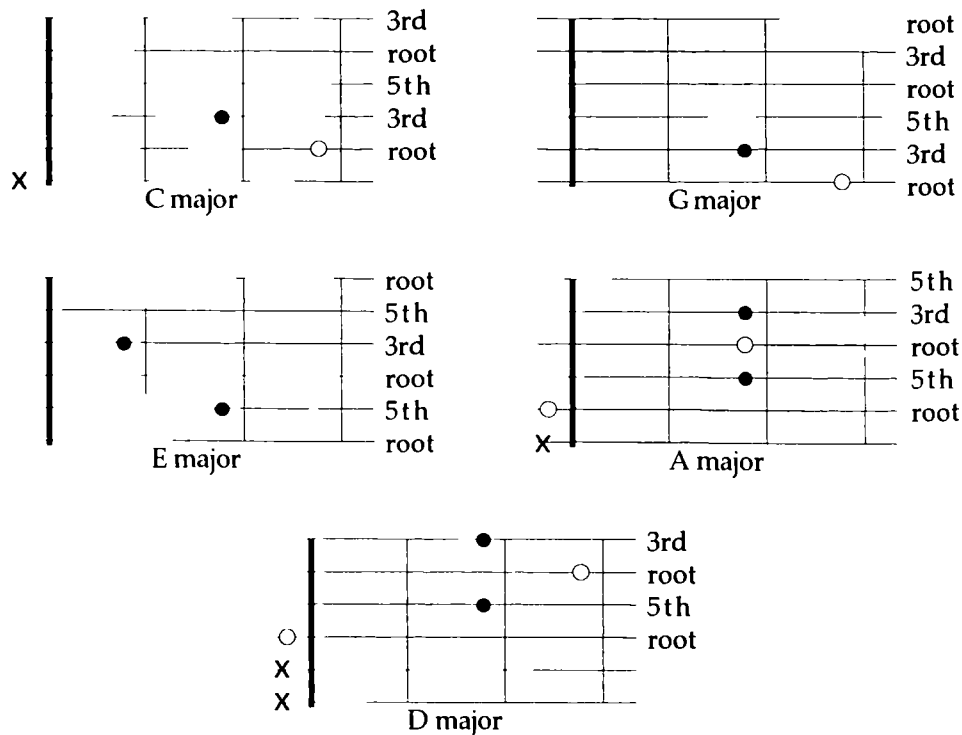


Fig. 2-7. Five open position forms.

By referring to figures 2-6 and 2-7 it can be seen that the C and G chords are spaced in close position. The voicing for the C chord is: root-third-fifth-root-third, and the voicing for the G chord: root-third-fifth-root-third-root. These voicings on the guitar are the same, except for the additional Root note on top of the G major voicing. They descend on the fretboard from the root note on the E string towards the nut of the guitar. The physical shape of the two chords differs because of the

irregularity in the tuning of the guitar, that is the third between the G and B strings. The chords of D and A are major chords built in open position whereby the third of the chord is transposed up the octave: root-fifth-root-third. The D chord is voiced root-fifth-root-third, and the A chord is voiced root-fifth-root-third-fifth. The layout of these two chords ascends the fretboard towards the bridge. The E chord is a hybrid containing both an open position on the bass strings, root-fifth-root-third, and a close position on the treble strings, root-third-fifth-root.

Each of these five chord shapes can be moved up the fretboard chromatically to form other major chords. If the E major shape, for example, is moved up the fretboard by one fret, it forms an F major chord. When a chord is moved up the fretboard, a *barré*, whereby the index finger is laid across all of the strings thus transposing the guitar, has to be employed to compensate for the open strings. In figure 2-8 the curved line indicates the *barré*, the E shape being formed by the remaining three fingers.

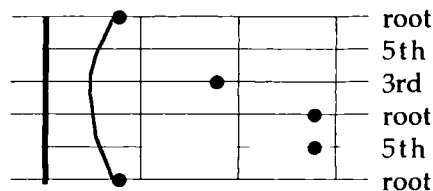


Fig. 2-8. F major chord form.

One of the principle problems with mastery of the fretboard layout of the guitar (as opposed to that of a keyboard) is that it is arranged in such a manner that some absolute pitches may be found at as many as five different locations. The fret locations for each string are arranged to yield a two octave chromatic scale. Thus the guitar has six two octave chromatic scales, on different strings, that are displaced by a third or a fourth. The guitar layout is further compounded by the irregularity in the standard tuning system: Any chord shape, scale, or melodic pattern, that is played on the bottom four strings must be altered to compensate for the change of interval between the G and B strings if the same relative pitches are to be retained when that pattern is moved across the strings. This is demonstrated in fig. 2-9, where the interval of an octave on the E and D strings is two strings and two frets apart (fig. 2-9.i). Likewise, the interval retains the same shape on the A and G strings (fig. 2-9.ii), but if the interval is moved across another pair of strings, on to the D and B strings, the higher pitch has to 'step up' a fret to compensate for the major third tuning on the B string (fig. 2-9.iii). The octave pattern is now three frets apart. This same shape of the octave form is then retained on the final (G and E) string pair (fig. 2-9.iv).

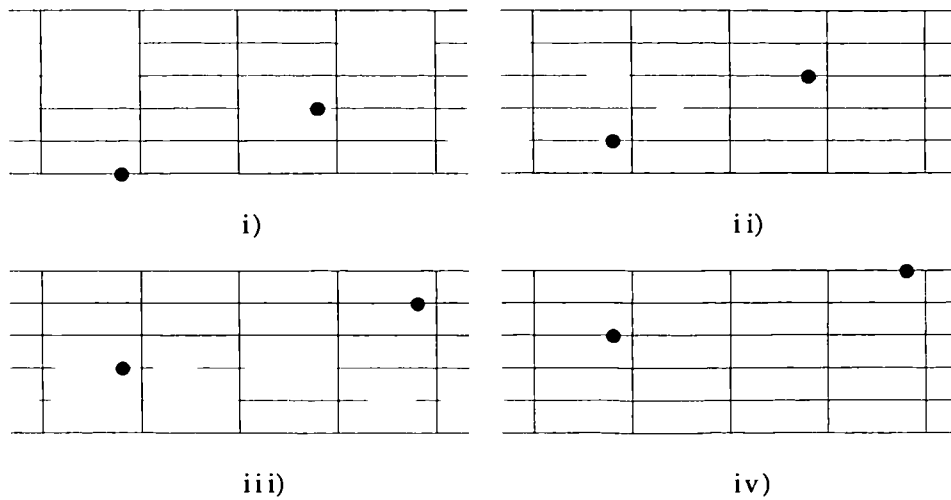


Fig. 2-9. Octave fingerings across the fretboard.

Fig. 2 10 shows the transformation of one of the open position chord voicings when it is moved across the strings. The E shape is shown at the twelfth fret with the root note e on the E string. The four lowest tones, root-fifth-root-third, are shown connected together by a line. Because of the tuning of the guitar the same tone, e, is located five frets lower, at the seventh fret, on the A string. It can be seen on the diagram that if the same physical shape is placed at the seventh fret the tone on the B string (marked with an x) forms a minor third because of the smaller interval between the G and B strings. In order to play the same absolute pitches at the seventh fret, a step up needs to be made on the B string. The arrow indicates the step up by one fret. The resulting shape is the A shape. The same principle then applies as the shape is moved to the second fret, with the root note on the D string. The step up on the B string here forms the D shape.

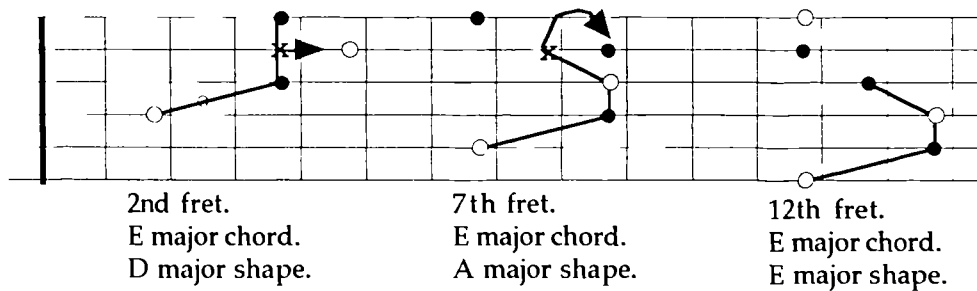


Fig. 2-10. The principle of chord shape transformation.

Thus although the E, A and D chord forms have the same voicing they are, on different string sets and at different fret locations, physically different shapes.

Each of the five open position chord shapes can be moved up the fretboard to produce other chords. For example, each of the five shapes can be relocated to yield five different fingerings/voicings of a C major chord. It can be seen from fig. 2-

11 that these five basic shapes interlock in the manner of a jigsaw puzzle and cover the full range of the fretboard.

- The C shape descends down the fretboard from the root-note C at the 3rd fret on the A string.
- The A shape ascends from the same root-note on the A string.
- The G shape descends from the root note C on the low E string.
- The E shape ascends from the same root-note on the E string.
- The D shape ascends from the root note C on the D string.
- The C shape is duplicated an octave higher at the twelfth fret.

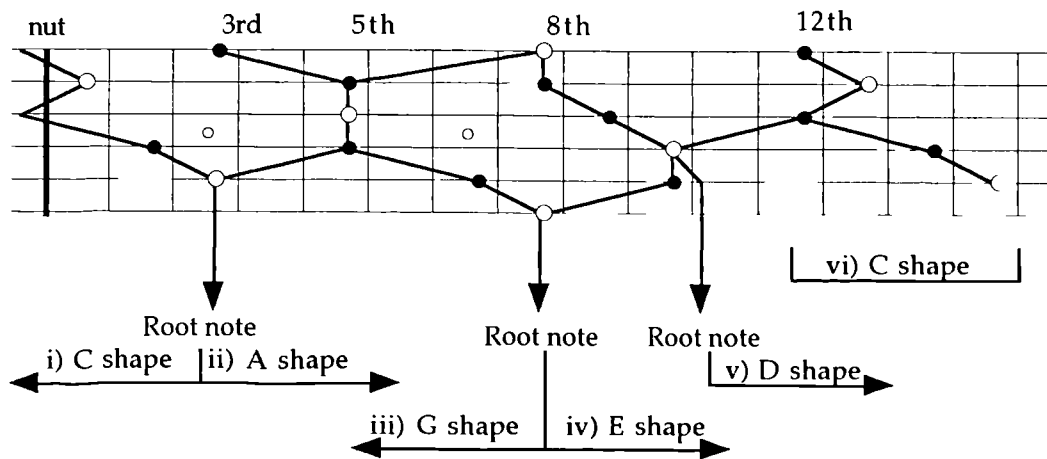


Fig. 2-11. Interlocking chord shapes.

The notation of these six chord voicings is shown in fig. 2-12.

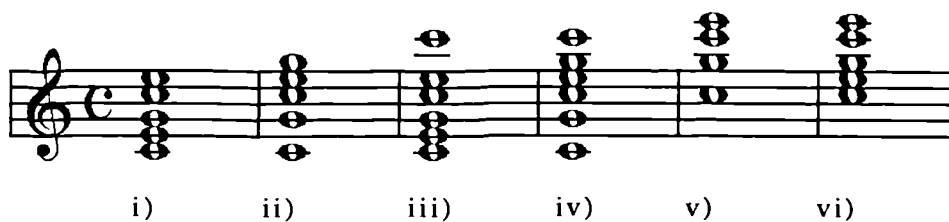


Fig. 2-12. C chord voicings.

Some pedagogical texts such as the Berklee College *Modern Method for Guitar*, (Leavitt: 1966) advocate the practice of twelve positions for the major scale on the fretboard corresponding to the degrees of the chromatic scale. With this system at any one position on the fretboard, any of the twelve major scales can be realised without change of position. However, informants (in particular the writer discussed this matter with the British jazz guitarist John Etheridge, but also endorsed in pedagogic texts, such as those by jazz guitarist Joe Pass: 1977) and experience have indicated that many improvising guitarists relate their improvisations not to an abstract 'skeleton' of tones (i.e., the scale), but instead to a more rigid foundation the

tones of the chord shape itself, which can be pictured in the mind's eye or felt beneath the improvising fingers of the hand.

It can be seen from the above fig. 2-11 that in order to form different positions of the C chord on the guitar fretboard the five basic shapes are arranged in the sequence C, A, G, E and D. Some guitarists (notably Pass: 1977) and commentators have used the word 'caged' as mnemonic to aid in remembering this layout. This is sometimes known as the caged system. Furthermore, improvising guitarists have described that their single note improvisations are often conceived as being constructed over an inner visualisation of one of these basic shapes. A good example of this is found in the improvisations of Pass, under whose convoluted melodic lines lies the simple chord shape. Pass wrote: "With the chord forms acting as points of anchor or reference, the ability to create an improvised scale or melody will be unhampered by the struggle to find notes" (1977: 3).

2. 2. 4. Analytical layout: pentatonic scale areas.

As an aid to the analysis of melodic material, the guitar fretboard can be subdivided by five anhemitonic pentatonic scale areas (in the form C D E G A) which correspond to the five chord shapes described above. Underlying each of these pentatonic scale areas is not only one of the major chord shapes described above, but also its relative minor.

One spatial layout that is used in the analysis as a basic framework which underlies improvised melodic material on the guitar in jazz and blues styles, is the pentatonic scale shown as position 1 in figure 2-13. The tuning of the guitar facilitates movement through this set of tones in that they fall well beneath the left hand fingers within a four fret span. The index finger is always located at the same fret position which allows for ease of visual and tactile monitoring and there are two tones on each string which provides for an up-stroke-down-stroke right hand articulation. This scale layout, which occurs because of the physical properties of the guitar, is one that has been thoroughly exploited by improvising guitarists, particularly those in blues and jazz idioms.

Some analytical terms have been borrowed from Western art music: suspension, auxiliary note, anticipation, *cambiata* and *échappée*, and applied to jazz improvisation. However, the concept of consonance and dissonance is different in jazz theory from that in tonal harmony of the Classical period. There are two principal types of dissonance: non-essential, which is resolved within the sounding of a single chord, and essential which is resolved on a change of chord. With the development of jazz harmony there is an erosion of these distinctions. Extended chords are non-essential dissonances. These chords are, however, often treated as

essential in jazz. Their resolution is delayed until after a chord change, so that the dissonance is incorporated into the chord. Resolution of a dissonance can be greatly delayed, or even abandoned altogether. These tones within a chord add tension. Mehegan suggests that “chords of less than a seventh are insufficient for jazz” (1959: 11).

When the fingering pattern shown at figure 2-13 is placed at the fifth fret an anhemitonic pentatonic scale based on C is produced comprising the tones: C-D-E-G-A. This pentatonic scale is related to the C major scale but is a gapped scale that omits the 4th and 7th degrees. In jazz and blues parlance and guitar periodicals (i.e., Bush 2001: 134) the scale is known as a “major pentatonic” scale, because of the major third, C - E. In pedagogic texts, such as *A Modern Method for Guitar* (Leavitt 1966), much has been made of the use of chord-scale relationships as aids to improvisation. Rizzo says that:

Chord scales help to determine the tones that the jazz improviser chooses to play against a chord sequence or chord progression. Chord scales are determined from the keys in which the chords have a definite harmonic function (1973: 103).

Kernfeld defines modal jazz as a style that:

... developed in the late 1950s, in which modal scales (or their general characteristics) dictate the melodic and harmonic content. Modal jazz rarely adheres strictly to the classical modes (dorian, phrygian, etc.), but it creates their flavour... (1988: 116).

Mehegan says that the modes “... built on the twelve major scales represent one of the most important elements of jazz improvisation. They are highly effective in building a horizontal “blowing” line...” (1959: 82).

In jazz theory the pentatonic scale can be used as a skeleton or framework of tones that can be used to improvise over the chord of C major or, indeed, the key of C major. But it is also ambiguous: A C major chord can occur as the tonic (I) in the key of C, the sub-dominant (IV) of the key of G, or the dominant (V) of the key of F. The heptatonic chord-scales that the jazz player would view as his improvisational tools would be the ionian, lydian and mixolydian modes. These three modes built on a C tonic are:

- Ionian: C D E F G A B
- Lydian: C D E F# G A B
- Mixolydian: C D E F G A B \flat

As the 4th and 7th degrees differentiate between the three modes, the major pentatonic is compatible with any of the three modes.

Notes of the triad, C-E-G, are supplemented with an added second D, and an added sixth A. In jazz and blues harmony both of these tones are treated as consonant.

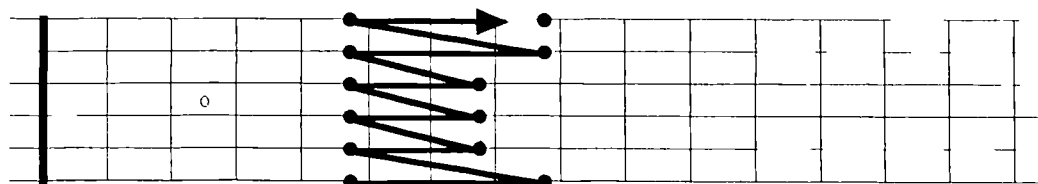
The pentatonic set of tones discussed above, in a rearranged order, forms the pentatonic scale A-C-D-E-G. In jazz theory this is termed the minor pentatonic scale because of the minor third between A and C. Jazz and blues players consider it a framework that can be used to improvise against an A minor triad. The gapped scale omits the second and sixth degrees. The three minor modes that feature this pentatonic set are aeolian, dorian and phrygian. Placed on an A tonic these three modes appear as:

- Aeolian: A B C D E F G
- Dorian: A B C D E F# G
- Phrygian: A B♭ C D E F G

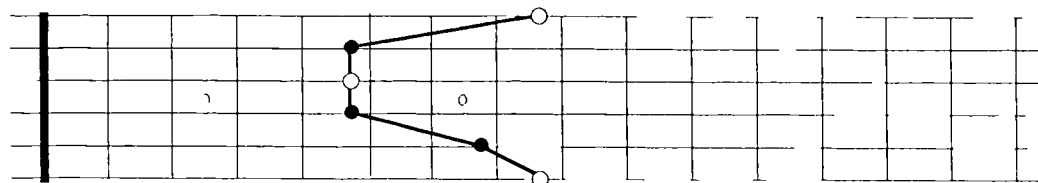
The tones omitted from the pentatonic scale are again those which differentiate between these three modes.

The same minor aggregate of tones are the pre-defined blues scale described by Bailey and Driver at section 2. 1. 3 above. In pedagogic texts on blues improvisation this aggregate of tones can be used to improvise against an A major triad or an A flattened seventh chord. Tones of the triad, A and E, are supplemented with two blue notes: the flattened third C, and the flattened seventh G. The validity of this pentatonic blues scale concept will be examined below in the actual performance practise of the two pioneering blues guitarists Johnson and Walker.

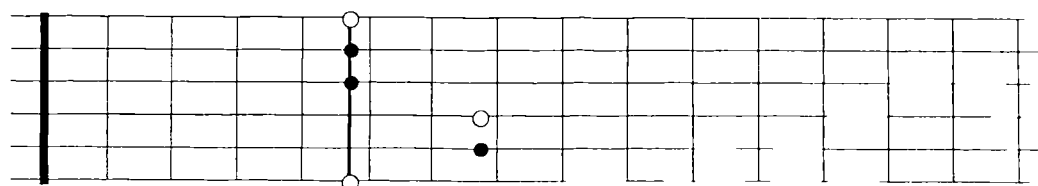
How the pentatonic aggregate functions is dependent on the tonality of the accompaniment. In the above example, C-D-E-G-A, are given tonal 'meaning' by the underpinning key centre; which in jazz/blues theory can be C major, A minor, or A major. Figure 2-13 shows the layout of the pentatonic scale on the guitar fretboard with the corresponding underlying triadic chord shapes shown beneath.



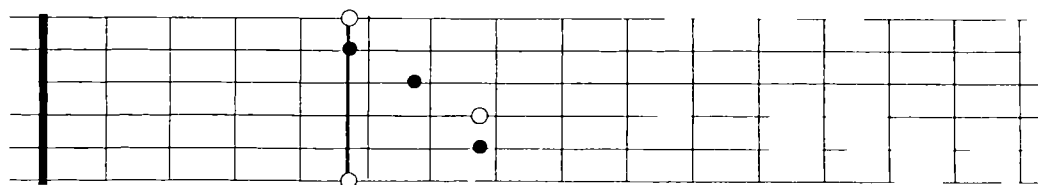
Pentatonic scale layout



C major chord. (G shape)



A minor chord. (E shape)



A major chord. (E shape)

Fig. 2-13. Pentatonic scale, G chord form.

Because of ease of fingering on the instrument, pentatonic scales are widely employed by guitarists in improvised music. By combining the 5 major chords forms C, A, G, E and D, with their relative minors the complete fretboard can be subdivided into 5 pentatonic areas. These areas, along with the five chord forms, will be used as a tool to aid in the analysis of the spatial layout of the fretboard.

It was shown above in fig. 2-7 that there are five basic open position chord shapes on the guitar. And it was seen in fig. 2-11 that these five chord shapes can be interlocked to cover the entire range of the fretboard. It was then shown in fig. 2-13 that a pentatonic scale form falls beneath the fingers at the position that is relative to the underlying G major shape. There is, similarly, a pentatonic scale shape that underlies each of the other four basic major chord shapes so that the scales, like the chord shapes, interlock in the manner of a jigsaw puzzle. That is in order to form the pentatonic scale two tones are played on each string. The uppermost tones of one pentatonic position form the lower tones of the next position up the fretboard, as can be clearly seen on the following figure.

Thus, all of the positions can be transposed in a block to any position (or key) on the fingerboard.

Figure 2-14 shows, in two octaves, the layout of the pentatonic scale for the C major, A minor and A blues shapes.

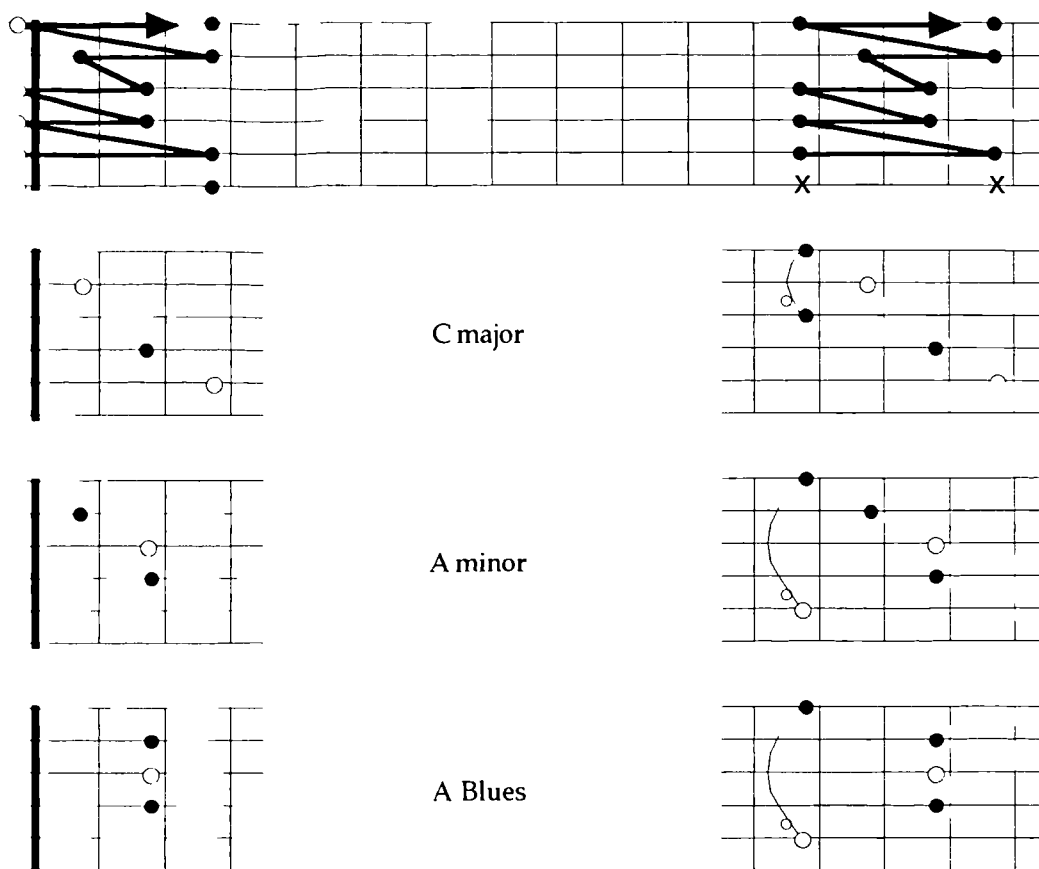


Fig. 2-14. Pentatonic scale, C chord form.

Fig. 2-15 shows the pentatonic scale for the C chord formed from the A shape, and its relative minor and corresponding blues scale.

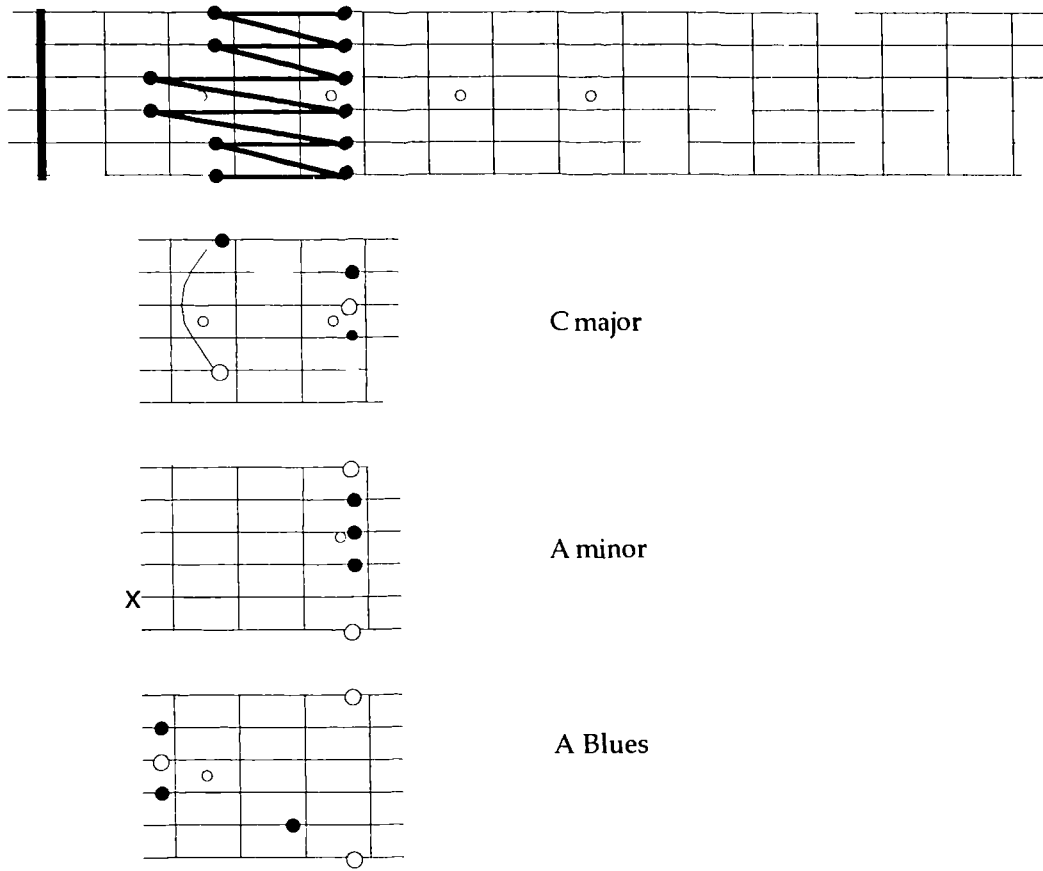


Fig. 2-15. Pentatonic scale, A chord form.

Figure 2-16 shows the pentatonic scale for the C chord formed from the E shape and its relative minor and corresponding blues scale.

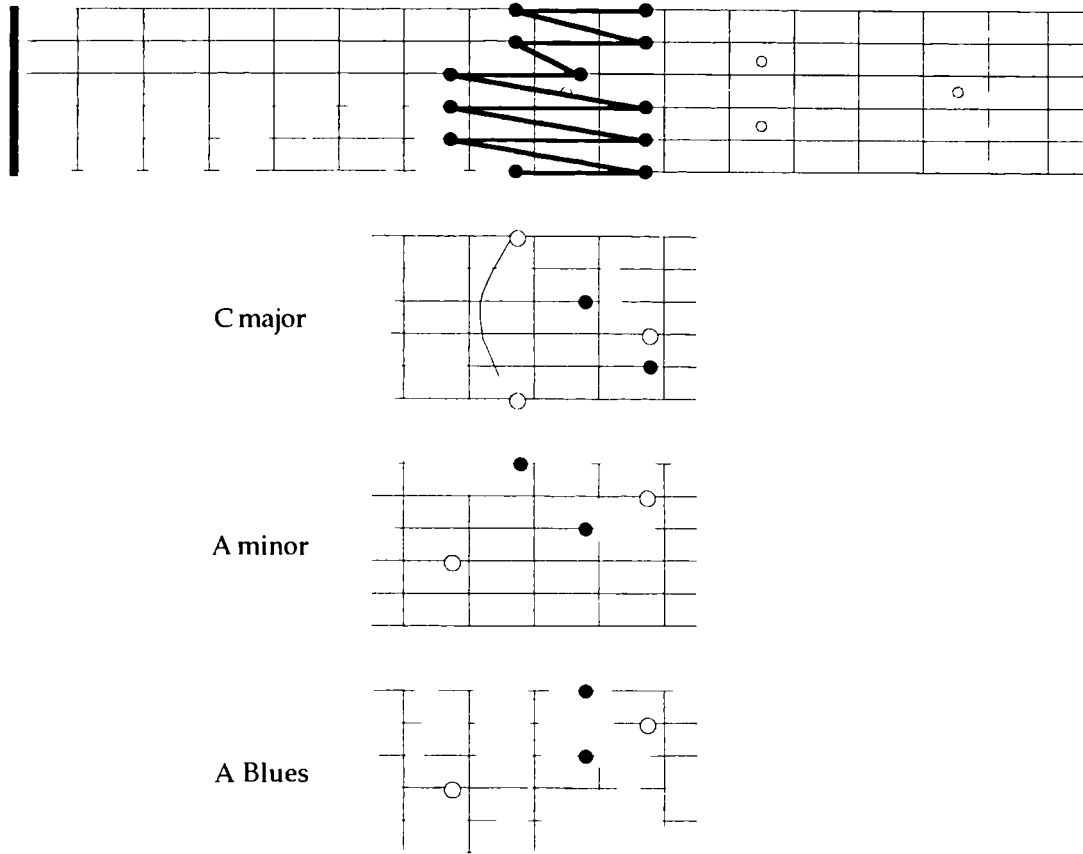


Fig. 2-16. Pentatonic scale, E chord form.

Fig. 2-17 shows the pentatonic scale for the C chord formed from the D shape, and its relative minor and corresponding blues scale.

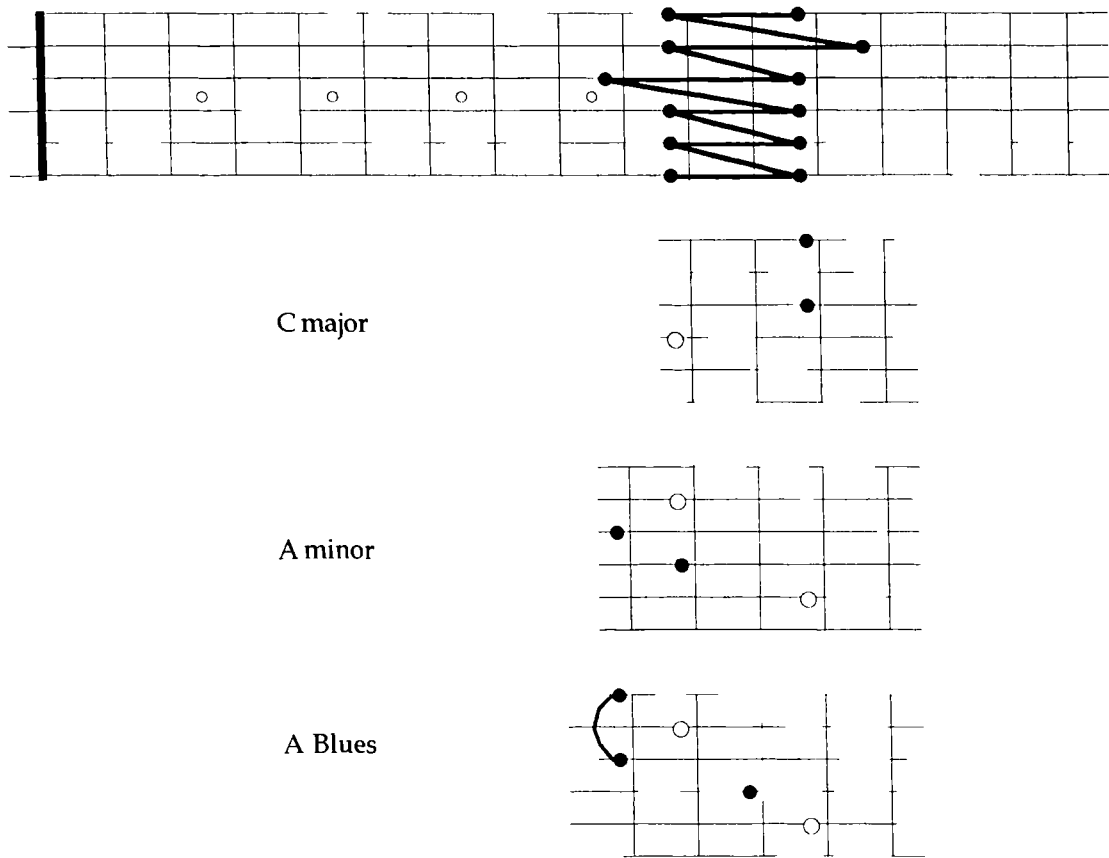


Fig. 2-17. Pentatonic scale, D chord form.

2. 2. 5. Motivic layout.

The Charlie Christian motives as identified by Gunther Schuller that were shown as figs., 2-2, 2-3 and 2-4 above can be similarly notated on a fretboard grid (figure 2-18) in which the arrow indicates the sequence in which the tones are played. It can be discerned from these diagrams precisely what Schuller had meant to convey by the observation that these gestures lie "well in the hands of guitarists" and furthermore the similarity between the gestures can be clearly seen. It is also possible to consider the "strong harmonic implication" as it is represented on the fretboard. The diagrams are not shown at a precise fret location and are thus not key specific. The position of the root notes indicate that the motive is played relative to an underlying A chord form. As each of the motives above occurred in a different key it may be inferred here that the improvising guitarist has performed motives that he

has perceived as being relative to an underlying chord form irrespective of considerations of pitch or key.

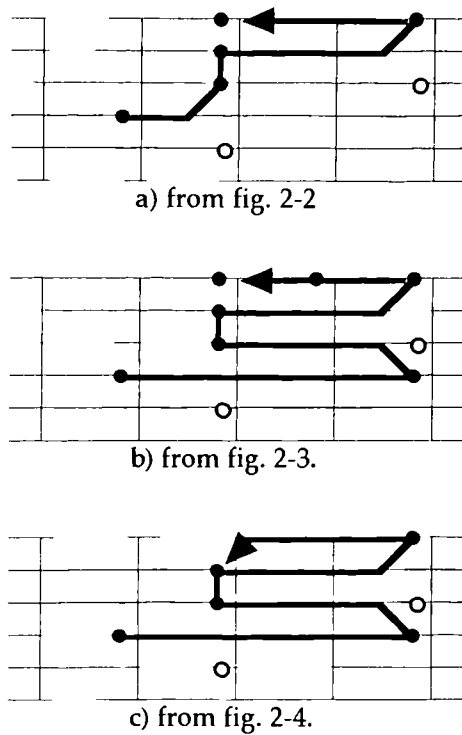


Fig. 2 18. Christian motives in fretboard notation.

Two common elaborations of an E7th chord at the guitarist’s disposal are the E9th chord and the E6th chord. These two chords are commonly realised on the guitar with the following physical shapes.

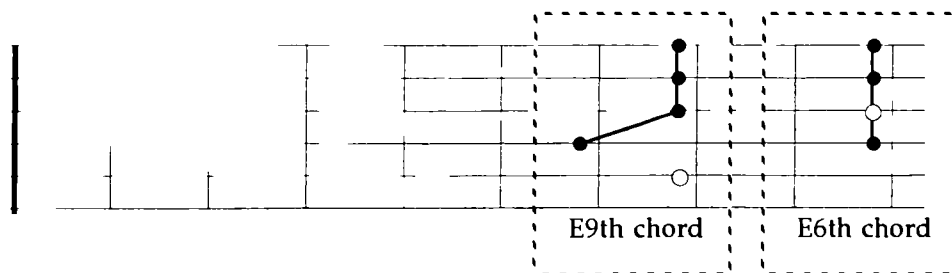


Fig. 2 19. E7 chord elaborations.

Christian’s gestures comprise tones derived solely from these two shapes with the exception of fig. 2-18 b) which includes one chromatic note that chromatically ‘fills in’ the gap between the two tones on the top E string.

Christian seems to have derived this type of gesture from Django Reinhardt. Christian was an influential guitarist whose style combined the gestures of blues with

the fingering strategies that had been initiated by Reinhardt. It has been said that by about 1938 Christian was reproducing Reinhardt's solos that he had learnt from recordings. The guitarist Mary Osborne described Christian's playing at about this time saying: "And here was Charlie Christian playing Django's "St. Louis Blues" note for note, but with an electric guitar" (Mongan 1983: 87). It is beyond the scope of this thesis to examine the borrowings of melodic motives within the jazz tradition, but this is an example of how the motivic figures of one guitarist can, by the imitation of another guitarist, enter the repertoire of a musical style becoming part of the 'common stock of licks' (Wilmer 1988: 41) as discussed in 2. 1. 4 above. Similar motivic borrowings between performers will be examined in the context of the blues.

That Reinhardt seems to have initiated this type of motivic gesture on the guitar adds credence to the hypothesis that human movement coupled with the instrument's physical layout are vital aspects of performance practice. As Reinhardt was already a professional guitarist when he was badly burned in an accident, he had to re-learn how to play with only two 'good' left hand fingers (the index and middle fingers). Consequently he would frequently employ chord voicings that he could articulate with only one or two fingers, in both his chordal playing and arpeggiated in single note melodic lines, such as the ninth and sixth chord shapes discussed above. The ninth shape is shown below in fig. 2-20 with Reinhardt's left hand fingering indicated by the numbers. Reinhardt would frequently employ the same voicing for a dominant chord and for a minor chord. This voicing, above a different root note, forms a dominant 9th chord, fig. 2-20 a), or a minor 6th chord, fig. 2-20 b).

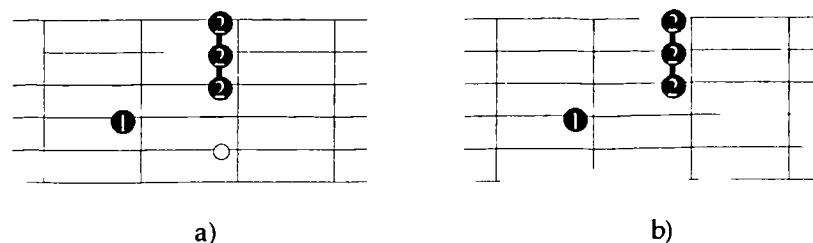


Fig. 2-20. Reinhardt chord form.

Bailey (1985: 254) goes further than Schuller with his analysis of left hand motion and identifies and examines specific left hand movement patterns that are employed on the Afghan *dutar*, in particular what he calls "cluster patterns" which occur at a single position on the fretboard. These commonly employ the first finger located at a fret position with fingers two and three utilised to fret tones above that position. One mode of movement is referred to by Bailey as a "three-finger, two-component mode of operation where the second or third finger is used to stop frets above that held by the first finger, but the third is not used against the second" (1985: 255).

The fingering for fig. 2-18 a) is as follows:

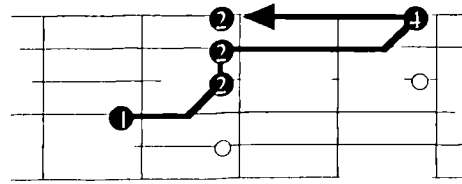


Fig. 2-21. Christian motive.

It can be seen that the left hand fingering pattern employed here by the guitarist is quite different from that being observed by Bailey. It forms an arpeggiated movement across four strings with one tone per string except for the last string, which has two tones at the end of the motive. The penultimate tone is fretted by the fourth finger against the second finger. This is a recurrence of the chicken and egg situation. One may question the extent to which these two differing idioms are a consequence of physical action on an instrument tempered by cultural and stylistic acceptability.

Returning to the two bar improvised Zeke Turner excerpt shown in fig. 2-1 this could be transcribed on to a fretboard notation, (in which the ascent and descent patterns are divided into two separate diagrams), as follows:

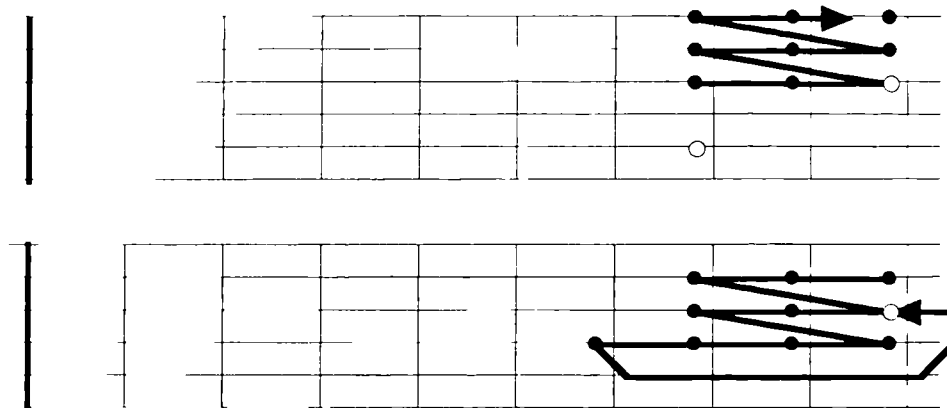


Fig. 2 22. Zeke Turner 'Move it on Over' motive in graphic notation.

Given that the performer has four fingers on the left hand and the physical layout allows for one finger to be placed per fret, the instrument facilitates the playing of between one and four different tones on a single string without a change of position. Position on the guitar is generally defined by the fret at which the index finger is located. The example above would accordingly be said to be at the 7th position.

From figure 2-22 it can be seen that Zeke Turner has, in a similar manner to Christian, “filled in the gaps” between the E6th and E9th chord shapes. The structure of his improvisation has been shaped by the tone selection, which has, in turn, been governed by the performer’s physical attributes and the physical layout of the instrument; the phrase itself can be seen to be very ‘guitaristic’. As Bailey has expressed it: “The relationship between an instrument and its music has to be examined in terms of a third factor, the human sensorimotor system...” (1985: 243).

In the above gesture the first change of string occurs after the third tone, that is between the G and B strings. Because the tuning between these two strings is a major third, the step back down the fretboard (towards the nut) of two frets forms the ascending interval of a major second. Thus the tone F natural is omitted from the chromatic scale. The next inter-string movement is between the B and E strings. Although the performer executes the same shape on the fretboard (that is a step back of two frets) the tuning between these strings is a perfect fourth, B - E. Therefore the interval that is produced is a minor third, and thus the two tones A and A# are omitted from the chromatic scale.

A form of notation is also employed on the transcriptions that is termed guitar tablature. Guitar tablature can be more helpful to the analysis of a guitar improvisation than Western notation primarily because some tones, middle C for instance, can be realised in as many as five different positions on the fretboard. Unlike Western notation, tablature shows the precise location on the fretboard at which a pitch is produced, and thus reflects the fingering strategies of the performer. On tablature six horizontal lines represent the six strings of the guitar. Numbers on the lines indicate the fret at which the left hand fingers are located. Fig. 2-23 shows a musical example in both western notation and guitar tablature.

It is possible that a handed-down repertory may be unrecognised by the performers using it. In order to examine this there follows an example of a specific movement pattern that occurs in Eric Clapton’s 1992 performance of the twelve bar structured song ‘Before You Accuse Me’ (written by E. McDaniel in 1957), taken from the “Unplugged” concert. During the solo, each time the accompanying guitarist plays a sub-dominant chord, (A major), Clapton repeats a melodic phrase. This phrase is apparently a fingered response to that chord, as it can be shown placed against the chord shape (fig. 2-25). The first instance of this phrase is at bar 5 of the improvisation, shown below (fig. 2-23). It is then repeated, with variation in the subsequent bar.



Fig. 2-23. Eric Clapton, 'Before You Accuse Me' bars 5 and 6.

The phrase is later played again at the restatement of the sub-dominant chord at bar ten, shown in fig. 2-24. Here the fragment is metrically displaced, opening with the first three beats from bar 5 of fig. 2-24 and culminating on the fragment of the gesture taken from the restatement of the theme (bar 6, beats 2 and 3).



Fig. 2-24. Eric Clapton, 'Before You Accuse Me' bars 9 and 10.

The repetition in these two examples appears to be indicative that the melodic phrase is a practised left hand gesture. The performer has trained his fingers to make certain moves which are instigated by the underlying model. The gesture is not, however, totally fixed; rhythmic and melodic variation have been introduced into a later statement of the phrase. There is not only one pathway through this particular group of tones.

On the graphic notation it can be seen that the formula falls conveniently beneath the left hand fingers, and that there is a relationship between the tones and the underlying sub-dominant chord shape. The first of the diagrams in fig. 2-25 shows the shape of the sub-dominant A major chord at the fifth fret of the guitar and the lower diagram shows the shape of the motive of the first bar of fig. 2-23. The phrase is constructed around the tones of the triad of the sub-dominant chord.

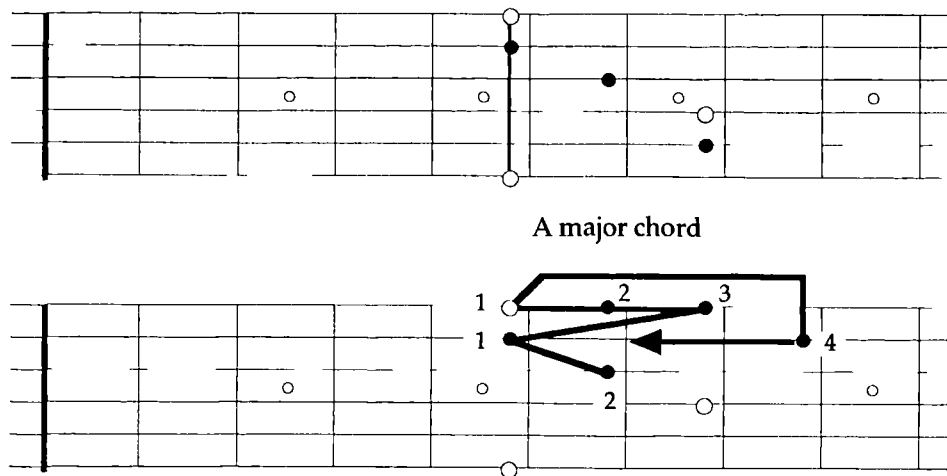


Fig. 2-25. Clapton, 'Before You Accuse Me' melodic phrase bar 5.

The left hand fingering is indicated on the fig. 2-25. The opening five tones are accomplished by a in the left hand motion 2-1-3-2-1. The gesture concludes with a left hand 4-1 motion on the B string.

Fig. 2-26 shows that the bar 6 begins with a restatement of the fingered 3-2-1 descent on the top E string.

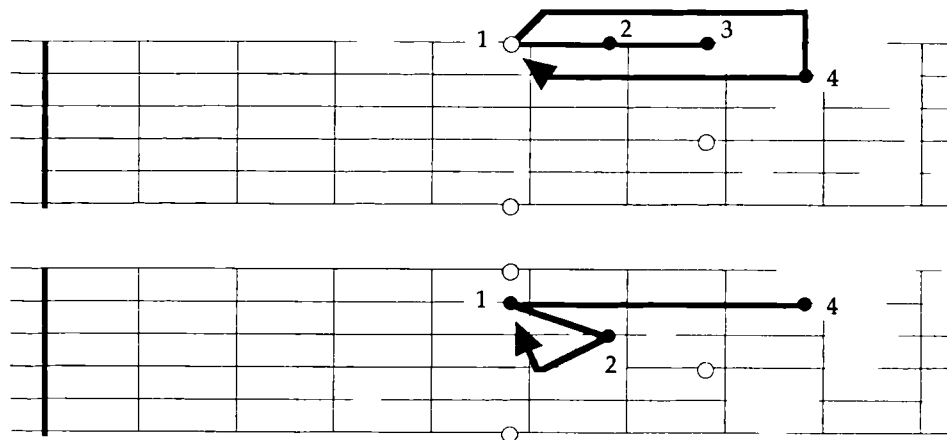


Fig. 2-26. Clapton, 'Before You Accuse Me' melodic phrase bar 6.

It is also informative to note that in bar 9 a related four finger gesture occurs which comprises three tones in a chromatic descent on the top E string and a descent to the flattened seventh of the chord on the B string (fig. 2-27), the gesture here being placed against the dominant chord at the seventh fret. Thus the same left hand finger gesture is employed against the same underlying chord form, but at a different fret location.

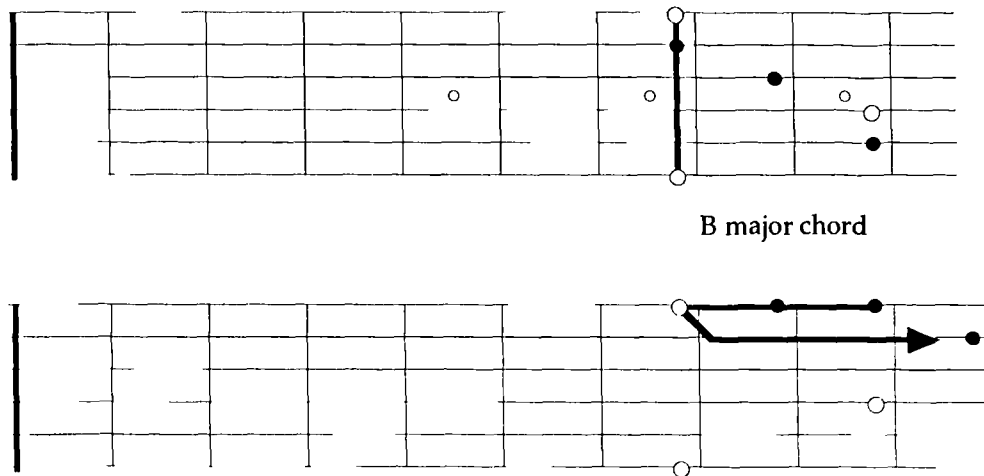


Fig. 2 27. Clapton, 'Before You Accuse Me' melodic phrase bar 9.

The aural effect of this last example is interesting; it does not sound like a characteristic phrase within the blues tradition. This is partly because it contains the flattened 6th degree, C natural, of the key of E, a tone not particularly associated with the blues scale.

Perhaps the gestures examined above could be described as part of a 'common stock of motives', that is, part of a tradition that is available to blues improvisers. This particular melodic gesture is also frequently found in the improvisations of Lonnie Johnson and is characteristic of his response to the sub-dominant chord. (The motive is labelled 'x' in the analysis of Johnson below). This can be seen, for example, in his 1942 recording of 'When You Feel Low Down', (fig. 2-28) but had been employed by Johnson from his earliest recordings of 1925.

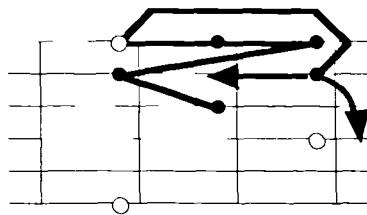


Fig. 2-28. Johnson 'When You Feel Low Down' melodic phrase bar 9.

The curved arrow on the fig. 2-28 represents an inflected string whereby it has been pushed upwards by the performer. This increases the tension on the string thus raising the pitch of the tone produced. The tone that is produced in this case is the $\flat 7$ th degree. The pitch content of this melodic phrase is the same as the motive at bar 5 (fig. 2-25) of the Clapton motive, except that the former produced the penultimate tone a fret higher, that is without the string inflection.

Eric Clapton does not cite Lonnie Johnson as a particular influence on his playing. It is plausible that Johnson never received the full credit for the innovations that he brought to the improvised guitar. His influence is felt more through players that were directly influenced by him, notably T-Bone Walker and B. B. King. The same motive is commonly used by King in his response to the sub-dominant chord, as for example in one of his earliest recordings 'Mistreated Woman' (1950). In his execution King has omitted the second tone (the fifth degree) of the melodic formula as it is played by both Johnson and Clapton by omitting the B string in the ascent (fig. 2-29).

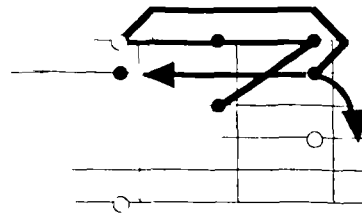


Fig. 2-29. King 'Mistreated Woman' melodic phrase bar 10.

As Clapton does not cite Johnson as a formative influence it is possible that he derived the melodic gesture directly from King.

The above examples furnish us with several pointers:

- The inadequacy of Western staff notation for non-Western music has frequently been remarked upon in the field of ethnomusicology. Sachs remarked that: "transcriptions are too subjective to be trusted uncritically and should, wherever possible, be compared with the phonographic original" (1961: 22). We may disagree with the transcriber, or even our own earlier transcriptions, or else the transcription might not aid in any way with the analytical apparatus that is required in order to understand the conception of an improvisation. Furthermore the five lines do not accommodate the inflections of pitch common to blues, as Hood has said "Perhaps the most fundamental deficiency of Western notation for the purposes of transcription of non-Western music is the limitation of twelve fixed pitches within the octave"(1971: 86).
- The performer may have at his disposal means other than the purely auditory which influence the course of conceiving his improvisation.
- Other means, which may be visual, kinaesthetic or tactile, could be observed as being related to the physical design and construction of the particular instrument that is being employed by the improviser.

- A more graphic form of notation of the improvised material could be devised that is closer in essence to the way in which the performer perceives his instrument and would therefore give clues as to the nature of improvisation.
- Analytic methodology that is designed in response to the above observations could reveal fingering patterns inherent in improvisations that are related to the specific layout of the instrument.
- The isolation and classification of such patterns may be useful in defining the stylistic elements that are particular to a culture or tradition.

Improvisation on the guitar is interconnected with fretboard position and geometrical shape. The nature of the physical properties of the instrument, coupled with human physiology (what is within reach beneath the fingers), influences what is possible. And what is possible on the instrument inevitably influences the music that is produced.

The above observations indicate that the coming together of the physical properties of an instrument and the physical capabilities of the performer is, in the words of Bailey and Driver, “a crucial element in the structuring of some kinds of music” (1992: 57).

Sundberg and Lindblom suggest that:

The task of scientific research is to answer two basic questions: How? and Why? The first question implies collection of observations on the research object: which are its characteristics? The latter implies that the observations are derived as consequences of some principles, which can also be used to predict observations not yet made (1991: 246).

Keil posed the question “What innovations did the earliest urban guitarists (e.g., Scrapper Blackwell, Lonnie Johnson) actually contribute?” and went on to say “... questions like these can be answered only superficially until someone takes on the time-consuming job of analysing note by note and phrase by phrase a large body of blues material” (1966: 208).

Bailey and Driver state that: “The way of playing a particular genre of music is characterised by certain patterns of movement that are specific to that style” (1992: 63).

The aim of the research is to design an analytical framework to examine how physical action on an instrument, tempered by cultural and stylistic acceptability, is reflected in the structure of the improvised music of specific guitarists in the blues genre.

This research focuses on the detailed analysis of fingering strategies adopted by early guitar soloists in the blues idiom, in order to examine the origins and evolution, and to classify the movement structures of this musical language, (in terms of melodic motives, melodic contour, prevalent intervals, cadential patterns, scale forms, pitch centre, range, frequency of tones, ornamentation, harmonic influence on pitch selection and the concept of consonance and dissonance). Through this it is hoped to reveal the relationship between the physical layout of the instrument and pitch selection.

The jazz saxophonist Joe Henderson, discussing improvisation, has said: "I think I was probably influenced by writers, poets - I mean just a full scope in relation to the written word. You know how to use quotation marks. You know how to quote people as a player. You use semicolons, hyphens, paragraphs, parentheses, stuff like this. I'm thinking like this when I'm playing. I'm having a conversation with somebody" (Floyd 1995: 141). If blues melodic phrases occur as syntactical structures within a genre of blues guitar playing, then it seems probable that specific gestures could be traced back to having been initiated by an individual, and be copied so widely that they become part of the 'common stock' of a stylistic repertory, and are then handed down from player to player through subsequent generations of guitarists. Each player within the idiom may be shown to borrow from a corpus derived from earlier repertories, but also to contribute new movement strategies to the repertoire, and thus take his place within a lineage of blues guitarists.

It is apparent that a melodic improvised guitar style was beginning to crystallise in the United States during the 1920s and that innovations were instigated by a handful of pioneering musicians. Since that period the style has been variously reproduced, consolidated or developed, to a greater or lesser extent, by later exponents.

2.3. Analytical aspects.

It was suggested above that the concept of scale, as an analytical framework, is transcended by that of mode by the inclusion of tone weighting and melodic characteristics. In this research transcriptions have been made of numerous single string melodic improvisations of Johnson and Walker which are subject to various analytical processes. Tone counts, which measure the frequency of tone reiterations,

are made for each solo and the data represented on fretboard notation. This reveals the full range and location of the scale tones that are employed as they appear on the instrument, including octave duplications, and thus facilitates a comparison of the tonal material used in different solos by the same performer, and between solos of different performers. The tone counts are subjected to a measurement process, termed a stemplot, in order to discern a modal hierarchy. The hierarchy is broken up into three sub-divisions: principal, secondary and incidental tones. The modes derived from this process can then be compared for consistency and for deviations throughout the oeuvre. The following section describes the analytical processes.

The transcriptions were subject to measurement processes, some elements of which are developed from statistical analysis methodology derived from *Introduction to the Practice of Statistics*, by Moore and McCabe (1993).

Any item which can characteristically be analysed as a number is termed a 'variable'. The variable that is being measured here is a musical tone that has been produced by plucking or otherwise articulating a guitar string. A 'value' is a number (the tone count) that represents all of the incidents of a variable (the individually articulated tone) within the course of a solo.

On Fig. 2-30, derived from 'Mr. Johnson's Blues', the tone counts are presented graphically on four adjacent fretboard diagrams (fig. 2-30). The first displays the number of times that a single tone occurs within a solo and shows the full range and the location of the tones employed. The second diagram shows the tones that are plucked but then modified by an inflection of the string (indicated by the arrow). The third and fourth diagrams present the same data as one and two respectively but as percentages of the accumulative tone count. The solo comprises nineteen different tones that, accumulatively, are articulated a total of ninety times. The tone that is articulated most frequently is the A on the E string, with eighteen articulations. It can be seen, fig. 2-30 example three, that tone is articulated for 20% of the total output of 'Mr. Johnson's Blues'. It can be deduced from the root note markers (white circles) that the solo is in the key of D and most of the activity is between the C and A chord forms on the top three strings, with a few tones located by the E chord form.

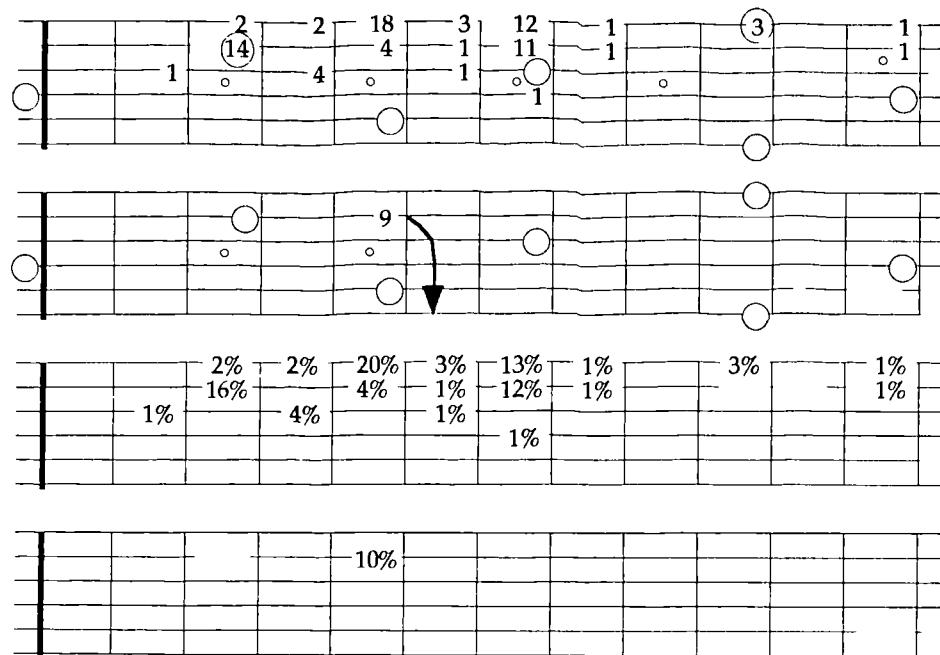


Fig. 2-30. Values of the tones employed in 'Mr. Johnson's Blues'.

The complete range that the performer employs is shown on the tone count diagrams this includes octave duplications. Dowling and Harwood's observation that: "Pitches an octave apart are treated as functionally equivalent in melodies, though each culture fills in the pattern of pitches within the octave in its own way..." (1986: 113). is not entirely satisfactory, because, in the words of the composer Ernst Toch:

While it is correct to say that the twelve tones of our chromatic scale exhaustively present the material of all their harmonic potentialities, it is not correct to say that they exhaustively present the material of all melodic potentialities as well. We may acknowledge the multifariousness of harmonies drawn from the twelve notes of an octave; but we succumb to a grave fallacy if we apply the same consideration to melody - even setting aside all considerations of variety in interval successions of rhythmical events.

To begin with the "twelve tones of an octave" do not embrace an octave but only a major seventh; the octave is the thirteenth tone and as such already a "repetition" of the first. And though it is entirely irrelevant harmonically whether we deal with any tone or with its higher or lower octave, it makes all the difference melodically (1977: 64-65).

The guitarist will, in all probability, treat the same tone in different ways in different octaves because of its position on the instrument in accordance with a basic

proposition of this thesis that analysis is more revealing about the nature of improvisation when it is instrument specific. The manner in which the octave is filled may thus be ergonomically determined. It was observed above that the same tone can be found on different strings at up to five different fret locations, therefore the performer may, in the course of his improvisations, produce the same tone at a different location because of gestural activity. In the above fig. 2-30, for example, the tone G is produced twice at the third fret on the top E string and once at the eighth fret on the B string.

The pattern of values of a tone (the root note on the B string for example), called its distribution, is expected to fluctuate throughout the solos. An aspect of the analysis will be to examine the nature of these fluctuations. It may be expected that variation will be more extreme between solos by different performers in accordance with Nettl's suggestion (1974: 18) that a musician who improvises repeatedly on the same model does so with a degree of predictability. This might be expected because of the fingering structures that have become the lingua franca of a performer's individual code, whereby the performer will have probably developed a stockpile of fingering strategies.

Some tones appear persistently throughout all of the solos, but other tones are confined to one or two performances. The values of the same tone differs between performances and the values of different tones used within the same improvisation will vary.

Factors will be examined which may influence any variation of the tone selection in an improvisation, such as: the use of electric guitar, in preference to acoustic guitar, the time period at which the solo was created within the career of the performer, and the scale position that is being employed by the performer on the fretboard. Distribution will be examined for:

- centre
- overall shape
- deviations.

In fig. 2-30 there are nineteen different tones; eighteen on the first diagram and one (inflected tone) on the second diagram. An examination of the distribution of tones shows the following: Variation is from a maximum of eighteen minimum of one:

- 1 tone is played 18 times
- 1 tone is played 14 times
- 1 tone is played 12 times
- 1 tone is played 11 times
- 1 tone is played 9 times
- 2 tones are played 4 times
- 2 tones are played 3 times
- 2 tones are played twice
- 8 tones are played once

In order to ascertain a hierarchy of tones a form of graphic display is used that is termed a “stemplot”. In this method a vertical line is drawn. A number placed to the left of a vertical line, called the ‘stem’, is the first digit from a list of values. A number placed to the right, the second digit from the list of values, is called a ‘leaf’. Thus, for example, the number 15 is composed of 2 digits; the first digit is 1 (which represents 10) and the second digit is 5. On a stemplot the 1 appears to the left of the vertical line as the stem, and the 5 appears to the right and as the leaf. When a series of numbers share the same first digit, such as 11, 12, 14, and 18 the stem figure (1) is used to represent all four as shown in fig. 2-31:

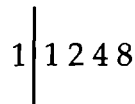


Fig. 2-31. Stemplot of the numbers 11, 12, 14 and 18.

When a number is composed of a single digit (as, for example, the number 5) the stem is represented by a 0 and the leaf by the number 5. (fig. 2-32):



Fig. 2-32. Stemplot of the number 5.

To illustrate this a stemplot is shown below of the distribution of values of the root note (tonic) played on the B string throughout twelve improvised choruses by Johnson during the period 1925 - 1929. The values of this tone in ascending order are 8, 14, 14, 15, 16, 16, 18, 19, 22, 22, 22, 31. These are shown in fig. 2-33:

```

0 8
1 4 4 5 6 6 8 9
2 2 2 2
3 1

```

Fig. 2-33. Stemplot of the root note on the B string from twelve Johnson solos.

It can be seen from fig. 2-34 (in which the same set of figures are employed) that when there are only a small number of tones each stem can be split into two. Here the first 0 represents the numbers 0-4 and the second 0 represents the numbers 5-9. The first 1 represents the numbers 10-14 and the second 1 represents 15-19, etc. Thus from the above set of figures: 8, 14, 14, 15, 16, 16, 18, 19, 22, 22, 22, 31 there are no tones that occur between 0 and 5, therefore that leaf is left blank. Similarly there are no numbers between 25 and 29, and so that leaf is also left blank.

```

0
0 8
1 4 4
1 5 6 6 8 9
2 2 2 2
2
3 1

```

Fig. 2 34. Stemplot of the root note on the B string from twelve solos.

The central figure of the distribution, termed the median, is the middle value of all of the observations when arranged in order of size. If the number of observations is odd the median is the centre of the ordered list, but if the number of observations is even the median is the average of the two central observations. In this example there are an even number of observations (12). The central observations are 16 and 18, thus the median is 17. The median is unlike the mean, or average, in that it resists the influence of extreme observations and is therefore said to be a resistant measure of centre.

To find the mean or average of the root note on the B string

$$x = \frac{(31+22+22+22+19+18+16+16+15+14+14+8)}{12} = 18.083$$

The median is 17 and the mean is 18.083. The mean here is greater than the median because of the influence of the extreme observation, 31.

The overall shape of the stemplot can be examined as to whether it has one or more peaks, or is symmetrical or 'skewed' to one side. In the above example the stemplot is slightly skewed: Given that the mean is 18.1, there are 7 variables below, and 5 variables above the mean. In statistical analysis the term skewed refers to a distribution which does not have equality above and below the mean. Deviations can sometimes be seen in the overall shape of a stemplot which may be gaps in the distribution known as 'outliers'. An outlier is defined as an individual observation that falls outside of the overall pattern or not in accord with the data, for which an explanation can be sought. In the above example (fig. 2-34) the value 31 stands out as an outlier. The elimination of the outliers contributes to identifying the fundamental essence of a performer's individual fingered patterning.

In this analysis quartiles are used to identify what will be termed the performer's principal, secondary and incidental tones: that is introducing a hierarchy into the scale of tones that the performer has elected to use in his improvisation. Quartiles are revealed by locating the median. The 1st quartile is the median of the observations below the median, and the third quartile is the median above that location. When there is an odd number of observations the median is the unique centre, and the location of quartiles excludes the centre value.

In this analysis the tones that occur below the first quartile are classed as incidental tones, those above the third quartile are classed as principal tones and the remainder are secondary tones.

The median and quartiles together with the largest and smallest observations give a five figure summary:

08	14	14	15	16	16	18	19	22	22	22	31
Min			Q1			M		Q3			Max

Stemplots are presented for each of the transcriptions in order to categorise the principal, secondary and incidental tones for each solo. The information that is gathered from the stemplots is then presented in charts in volume 2. Here the tone hierarchy is presented on fretboard diagrams including the layout of the principal, secondary and incidental tones.

In the course of this analysis transcriptions are collected, in the case of Johnson, over a twenty seven year period. Stemplots are not helpful in identifying systematic change over time, instead a 'timeplot' is made whereby time is placed on

a horizontal scale and the distribution of values of a tone on the vertical scale. Timeplots can reveal features such as overall patterns and deviations over time.

Fig. 2-35 shows a timeplot of the values of the root note on the B string, that is the same data that was presented above in the stemplot at fig. 2-34.

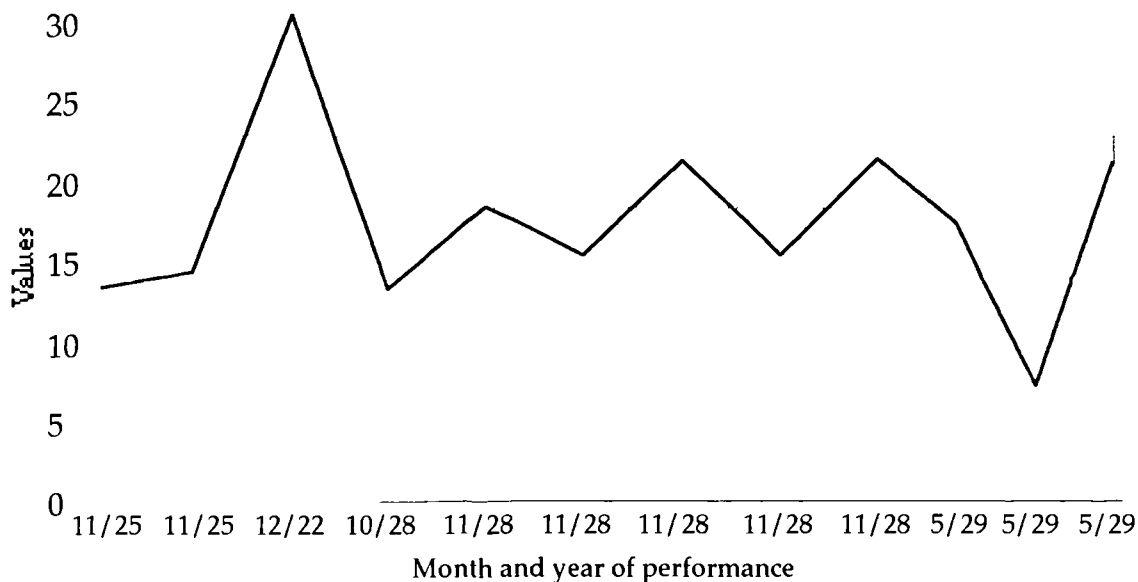


Fig. 2-35. Timeplot of the root note on the B string from twelve solos.

Material used in this analysis will be presented chronologically in order to indicate development in performance style over a period of time especially between a performer's early recordings and more mature works. Timeplots will be examined for overall trends - long term changes in the tone selection, or local variations in the rise and fall. Any irregular fluctuations can be identified and examined. This may be more revealing over a longer timespan as in, for example, a comparison between Johnson's early period and his 1940s recordings using an electric instrument. This raises issues such as to what extent did the change of instrument affect tone selection.

It has been suggested above that the guitar forms an interface, or 'transducer' (Bailey and Driver 1992: 57), between musician and music. The artist's conception is given an auditory outcome through the physical act of making music. Three physical aspects may contribute to the creation of an instrumental performance: the visual, the kineasthetic and the tactile. Movement patterns and visual cues form part of the learning process in some repertoires. A consideration of these physical aspects in relation to improvisation will lead to a deeper understanding of the musical genre and the creative impulse.

As an aid to visual analysis the guitar has been reduced to a grid which is sub-divided by basic underlying C - A - G - E - D chord forms and corresponding pentatonic scale areas. All of the analytical aspects will be presented on a form of graphic notation that depicts the improvisation in the way that the guitarist perceives it.

Style is the lingua franca which forms a setting in which an improvisation takes place. Dowling and Harwood referred to 'invariants across a set of pieces' (1986: 16), a set of implicit rules that occur within the context of a model. Familiarity with a style leads to an understanding of what is conventional and what is novel. Style here examines the blues guitar solo in the context of a twelve bar model.

In the analysis of tonal material employed in melodic improvisations on the twelve bar model tones will be presented as they appear on the instrument. Analysis is sub-divided into three levels:

- scale
- mode
- motive

At the most general level music can be reduced to the bare bones of a scale. Theory generally follows and endeavours to explain practise, but the two may be seen to be at odds with one another. It was shown that there is disagreement as to the definition of a 'blues scale' which is presented variously as a 'minor pentatonic' scale, a minor pentatonic scale incorporating a flattened 5th, two superimposed pentatonic scales, and a major scale with added blue notes. Here the pre defined blues scale will be examined in the context of an actual repertory of two pioneering practitioners of the blues guitar style.

Mode will consider a hierarchy of the tones employed in the scale and will be examined for ascent/ descent patterns. For each improvisation mode will be sub-divided by three levels:

- principal tones
- secondary tones
- incidental tones

The mode will be examined for melodic characteristics represented by left hand movement strategies. At the most detailed level is the motive which may represent a middle ground between improvisation and pre-composition. Motives may be the invention of a performer or a part of a handed down repertory of licks

that form clichés of the style. These will be represented as fingering patterns on the instrument.

CHAPTER THREE

IMPROVISATION ON THE C AND A CHORD FORMS

Twenty two twelve-bar blues choruses will be considered in this chapter. The Lonnie Johnson transcriptions have been divided into two periods; an early period; 1925 - 1929, and later period; 1941 - 1952. This division has been inserted because of the five year break in Johnson's recording career from 6th October 1932 to 8th November 1937, a suspension that was a result of the Depression. These periods will be labelled A and B. Twelve choruses are drawn from period A from six recordings including one with Louis Armstrong, two with Duke Ellington and two with Eddie Lang. Ten solos are transcribed from period B all of which were released under Johnson's own name. The complete list of transcriptions is shown in fig. 3-1 and 3 2:

Date	Title	Key
4/11/1925	Mr. Johnson's Blues (2 choruses)	D
10/12/1927	I'm Not Rough (With Armstrong)	A \flat
13/10/1928	Move Over (With Ellington)	E \flat
17/11/1928	Have To Change Keys To Play These Blues (With Lang, 4 choruses)	G & D
22/11/1928	Misty Morning (With Ellington)	A
8/5/1929	Blues Guitars (With Lang, 3 choruses)	D

Fig. 3 1. Lonnie Johnson solos period A.

7/2/1941	Lazy Woman Blues	D
13/2/1942	He's A Jelly Roll Baker	D
13/2/1942	When You Feel Low Down	G
15/7/1946	Keep What You Got	E \flat
2/6/1947	Love Is The Answer	E
9/5/1949	You Take Romance	G
9/5/1949	She's So Sweet	E \flat
14/9/1950	Little Rockin' Chair	G
20/9/1950	Nothing But Trouble	E
3/6/1952	I Can't Sleep Anymore	E

Fig. 3 2. Lonnie Johnson solos period B.

A complete list of the recordings is shown in volume two fig. 1 that includes the solo and recording numbers.

In period A the recording sessions of 'Have to Change Keys To Play These Blues' and 'Misty Morning' are only five days apart. In period B 'He's A Jelly Roll Baker' and 'When You Feel Low Down' were recorded on the same date, as too were 'You Take Romance' and 'She's So Sweet'. All four contain extensive use of riffs. The recordings of 'Little Rockin' Chair' and 'Nothing But Trouble' were six days apart. The close proximity of these recordings to each other allows for an examination of stylistic development over a time span; that is, whether there are greater similarities evident between recordings made on the same day than those recorded in two different periods years apart.

3. 1. Melodic resources: Fretboard position and 'scale' layout.

The ensuing section of analysis endeavours to eliminate idiosyncrasies and isolate those elements which are characteristic of Johnson's improvisations.

In volume two complete transcriptions are shown of the solos in both Western notation and on guitar tablature for the transcriptions of period A (volume two figs. 2 - 13).

Volume two fig. 14 shows a series of fretboard grids which display data derived from the transcriptions of the individual solos (volume two figs. 2 - 13). These grids present the layout and number of times that each of the tones are articulated by the performer in each solo.

3. 1. 1. Stemplots: period A.

Volume two fig. 15 presents data that is drawn from the tone count grids. In this table the values of the tones for each individual improvisation are laid out in the form of a stemplot in accordance with the description at chapter 2. 3 above. The median, 1st and 2nd quartiles presented beneath the stemplot for each solo are used to determine the principal, secondary and incidental tones as explained above at chapter 2. 3.

In all the examples the stemplots are skewed: This means that there is not an equal distribution above and below the mean. There is always a greater number of tones below the mean which is indicative that Johnson typically employs many tones a few times (the incidental tones) in the course of a solo and, conversely, a few tones many times (the principal tones). This can best be seen in 'Mr. Johnson's Blues', chorus 2 (Tone count in volume two fig. 14, stemplot in volume two fig. 15). There

are 14 tones articulated below the mean (4.7), (of which the performer articulates 8 different tones only, once each), and only 5 tones above the mean.

The most extreme example is 'I'm Not Rough' (stemplot on volume two fig. 15) in which there are two clusters of tones separated by a large gap: ten beneath the mean (which is 16.4), and only three above. In this example, by referring back to the tone counts on volume two fig. 14, it can be seen that the three tones that occur above the median are:

- the 5th on the E string (32 times)
- the root on the B string (31 times)
- the inflected second on the B string (29 times)

These three tones account for 68% of the entire performance. In examining the notation/tablatore of this solo (volume two fig. 4), the 5th on the E string is produced at the 11th fret on the top string, the root on the B string is at the 9th fret, and the inflected 2nd on the B string is at the 11th fret, with an accompanying arrow to indicate the inflection of the string. It can be clearly seen that Johnson has chosen to perform the solo in a persistent motor rhythm initiated by a regular right hand motion that produces quaver triplets consistently throughout the solo. In order to maintain this rhythm he frequently repeats a tone or, more specifically, one of the three tones indicated above. The opening three bars furnishes a good example; they consist fundamentally of descent from the 5th on the E string (the dominant note) through the gradual release of an inflected 2nd on the B string (the neutral 3rd) to the supertonic, to the tonic, with some decoration of this movement.

The layout of principal, secondary and incidental tones for each of the individual solos, derived from the stemplots, is shown on volume two fig. 16. It is evident from an examination of this chart that there is characteristically, in Johnson's improvisatory practice, a conglomeration of tones that relate to the C and A shapes of the tonic chord positions; but it is also apparent that in 8 of the 12 solos some attention is focused on the root note on the top E string, either in relation to the E or to the G tonic chord shapes. The analysis in this section deals exclusively with the C and A position improvisations.

It is uncommon for Johnson, in his solos, to descend beneath the D string in period A, and here the sole example is in 'Misty Morning' (examined below). Furthermore, one of the commonest tones played on the D string itself in the course of the solos is the dominant note. If this tone is excluded from the overall picture, then it is evident that much of Johnson's melodic material is presented on the top three strings of the guitar, and relative to the C and A shapes.

In period A Johnson recorded as a solo guitarist and as an accompanist to other blues singers. In Stefan Grossman's analysis (1993: 62) of Johnson's solo guitar style of the period, we may find a clue as to the evolution of his single string, melodic style. Two different non-standard tunings have been suggested by two different transcribers, both of which feature the bottom E string being de-tuned a whole tone down to a D, while the top three strings retain standard tuning. The two complete tunings are: D, A, D, G, B, E. and D, G, D, G, B, E. In many of his early recordings Johnson favoured the use of right hand fingers over plectrum. The device of de-tuning the bottom string allows the performer to play an alternating bass pattern on two different octaves of the tonic note (D) on the 6th and 4th strings as a drone-like accompaniment to more melodic fills on the top three strings. Through the use of this device it would seem that Johnson's melodic single-string solo style developed out of, or at least contemporaneously with, his accompaniment style. Grossman (1993) transcribes the opening chorus of Mr. Johnson's Blues which features the use of the low bass accompaniment.

It is also pertinent to note that Grossman states that many of Johnson's early recordings were in the key of D (which allowed the use of the dropped D tuning) Some tunes which appear in other keys may do so because the guitar was tuned low, or the performer had used a capo (a clamp that can be located at a fret on the guitar thus transposing the instrument to a higher pitch). Of the twelve improvised choruses of period A eight were possibly performed in the key of D. Of the four that were in different keys, two were with larger bands ('I'm Not Rough' with Louis Armstrong, and 'Misty Morning' with Duke Ellington) where the arranger would have dictated the key, and two are in 'Have To Change Keys To Play These Blues', which, as the title suggests, changes key from D to G. There appears to be an entry by Johnson in the wrong key at the opening of the 'Misty Morning' solo; one may speculate that this may have occurred because Johnson felt relatively unfamiliar with the key of A.

Those tones that are deemed to be principal tones are isolated and presented as stemplots in volume two fig. 17. Specific outliers, exposed in this table, are contained in a box with the title of their source solo shown alongside. Here the distribution of stemplots appear to be fairly symmetric (excepting the appearance of outliers) which suggests consistency in the use of the principal tones.

3. 1. 2. Principal tone outliers

The six tones that occur as principal tone outliers on volume two fig. 17 are:

Solo number and name	Tone and String	Occurrences
3) I'm Not Rough	5th on E string	32
3) I'm Not Rough	Root on B string	31
3) I'm Not Rough	Inflected 2nd on B string	29
8) Have to Change Keys... chorus 5	6th on E string	20
9) Misty Morning	5th on G string	12
11) Blue Guitars, chorus 2	Neutral 3rd on E string	10

Fig. 3 3. Principal tone outliers.

It is notable that of the six outliers the three most persistent occur in the improvisation 'I'm Not Rough' in which Johnson's performance practice includes the insistent right hand motor rhythm resulting in the higher than normal value of these particular tones, as described above.

Much of the climactic final chorus of 'Have To Change Keys To Play These Blues', chorus 5 is performed at the XIIth fret position, relative to a G shape tonic chord, which accounts for the higher than average incidence of both the 6th degree (which is an outlier) and the root note on the top E string.

The outlier in 'Blue Guitars', chorus 2 (neutral 3rd on the E string) is a result of Johnson's uncharacteristic use of a set of tones relative to the E shape. This outlier is a component of an eight times repeated riff-like melodic figure at the opening of the solo (volume two fig. 12).

The solo in 'Misty Morning' comprises tones from a lower tessitura than that characteristically employed by Johnson. An examination of the principal tones, in volume two fig. 16, reveals that this is the only solo in which the performer makes no use of the top E string at all. It is, furthermore, the only solo of period A where the performer's choice of tones descends down onto the A string. Perhaps it is because this improvisation is not in the key of D, as described above, that Johnson creates some gestures that are unique to the transcribed output. In particular there is a group of motives, delineated below, which descend down on to the D string via the outlier; the 5th on the G string, thus placing increased emphasis on this tone.

3. 1. 3. Totals of the principal tones for period A

The accumulative totals of tone counts of the principal tones, drawn from volume two fig. 17, are reproduced in the following table in a hierarchical order:

TONE	STRING	TOTAL	RELATIVE TO SHAPE
1) Root	B	217	C
2) 5th	E	159	C and A
3) 6th	G	107	C
4) 2nd	B	96	C
5) Infl. 2nd	B	92	C
6) 6th	E	88	A
7) 3rd	B	73	A
8) Root	E	52	G and E
9) 5th	G	31	C
10) Root	D	16	E
11) 4th	E	14	C
12) Neutral 3rd	E	10	E

Fig. 3-4. Accumulative totals of principal tones.

This data be reduced to the following scale:

Root - 2nd - Inflected 2nd - 3rd - 4th - 5th - 6th - octave.

This is a major scale which excludes the 7th degree but incorporates the inflected 2nd degree, thereby forming a neutral, or 'blue' 3rd. The only blue tone that occurs here is the flattened 3rd. The blue 7th is absent but instead we see emphasis on the 2nd, 3rd and 6th degrees. This scale, derived from the performance practice of an actual body of work, stands in contrast to the definitions of blues scale that were described in chapter 2. 1. 3.

3. 1. 4. Fret Position Accumulation period A

Volume two fig. 18-2 shows the number of solos in which specific fret positions occur throughout the twelve solos during period A. From this it can be seen that the root note, the 2nd, the inflected 2nd, and the 3rd degrees on the B string, and the 6th on the G string occur consistently throughout all twelve of the solos, whereas the 5th and 6th on the E string, and the flattened 3rd/sharpened 2nd on the B string occur in eleven of the twelve solos.

Both the fifth and the sixth on the E string occur as principal tones, the former being the second and the latter being the sixth in the table of the hierarchy of tones in fig. 3-4 above. Both tones are, however, absent from the 'Misty Morning' solo, as this improvisation makes no use of the top E string.

The totals are broken down in the 3 subsequent diagrams (volume two figs. 18-3, 18-4 and 18-5). These show the number of times that a particular variable has been a principal tone, a secondary tone and an incidental tone. Volume two fig.18-3 shows the number of occurrences of principal tones. If the number of solos in which tones occur as principals are presented as a hierarchy we achieve the following table:

TONE	STRING	TOTAL	RELATIVE TO SHAPE
1) Root	B	12	C
2) 5th	E	10	C and A
3) 6th	G	8	C
4) 2nd	B	7	C
5) 6th	E	5	A
6) Inflected 2nd	B	3	C
7) Root	E	3	G and E
8) 3rd	B	1	A
9) 5th	G	1	C
10) Root	D	1	E
11) 4th	E	1	C
12) Neutral 3rd	E	1	E

Fig. 3-5. The number of solos in which tones occur as principal.

This table presents tones that can be considered important components of the mode through their appearance as principal tones throughout the solos which; reduced to one octave, forms the following scale:

Root - 2nd - Inflected 2nd - 3rd - 4th - 5th - 6th - octave.

This table generates, by different means, the same scale as that produced from the tone hierarchy. The root note on the E string is a principal tone in all of the transcriptions, whereas the inflected second, which occurs in all twelve solos, is a principal tone in three, a secondary tone in seven and an incidental tone in two solos.

Volume two fig. 18-5 shows the number of solos in which tones that only occur as incidental appear. These are:

TONE	STRING	TOTAL
1) Major 7th	G	8
2) 4th	B	5
3) 5th	D	5
4) \flat 7th	E	4
5) #5	G	3
6) 2nd	E	3
7) Root	A	1
8) Root	G	1
9) \flat 2nd	B	1
10) 3rd	E	1
11) #5th	B	1
12) 4th	G	1

Fig. 3-6. The number of solos in which tones occur as incidental.

In terms of the scale hierarchy, the root note is the pre-eminent tone. When examining the locations of the root note on the fretboard during the period A the root on the B string and on the high E string are principal tones. The root on the A string and on the G string are only incidental tones. Root notes are not played on either the D string or the low E string. This presents evidence in relation to the hypothesis that there are benefits to be gained by instrument specific analysis in that the root note is seen to function differently at different locations.

This may not be of great significance where an instrument is constructed such that the chromatic gamut is presented consecutively in a straight line (that is in a keyboard type arrangement), but makes all the difference when it is not. The shape of an ascending scale will be identical throughout the different octaves of the former instrument, but will be quite different in the latter. Because of the tuning of the guitar in 4ths with a 3rd there may be as many as seven different practical fingerings of the same octave of a scale on the guitar. The kinaesthetic skills that are employed are different when different instruments are played and this can influence the nature of the music that is produced.

The following figurative version of the tabular information is derived from the above figs. 3-5 and 3-6 :

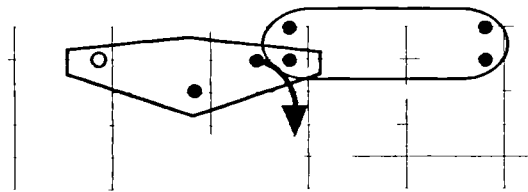


Fig. 3 7. Fretboard notation of Johnson’s principal tone layout.

These two key fretboard areas, which underlie the C and A chord forms on the guitar, are fundamental to the improvisational technique of Lonnie Johnson. His usage of these positions, as will be shown, goes some way to reveal the overriding melodic characteristics of his improvisations, and, furthermore, the way in which his playing differs from other early blues improvisers. It will also be shown how Johnson’s use of melodic resources at this fretboard location influenced a subsequent generation of blues guitarists beginning with B. B. King.

By examining the stemplots of fig. 15 it can be seen that in ‘Mr. Johnson’s Blues’ chorus 2, the performer articulates a total of nineteen different tones and in chorus 4, only fourteen different tones. The total number of different tones used in each solo throughout the twelve transcriptions during the period A, presented in ascending order are:

Solo number	8	3	7	9	10	2	4	5	6	12	11	1
number of tones	10	13	13	13	13	14	14	15	15	16	17	19

Fig. 3 8. Number of different tones used in the solos of period A.

This gives a difference between the maximum (nineteen) and minimum (ten) of nine tones, a median of 14 and a mean of 14.3. The two extremes are ‘Have To Change Keys To Play These Blues, chorus 5, which uses the minimum, ten different tones, and ‘Mr. Johnson’s Blues’, chorus 2 which uses the maximum, nineteen different tones.

Incidental tones are initiated by three different gestures:

- Chromatic tones arising from movement between principal tones.
- A shift of position away from the C and A chord areas.
- An isolated response to a particular harmony, most commonly the dominant chord, for which Johnson has a set of stock motives which incorporate extra tones which are derived from the dominant arpeggio.

The total number of different tones used in each solo throughout the ten transcriptions during the later period B are:

solo number	21	14	15	16	17	13	19	22	20	18
number of tones	11	12	13	13	18	18	20	20	24	26

Fig. 3-9. Number of different tones used in the solos of period B.

Here there is a difference of fifteen tones, a median of 18 and a mean of 17.5. It is evident from this that Johnson began to incorporate a greater number of tones into his improvisations in period B. These tones will be tabulated below together with an examination of the effects the addition of these tones makes in Johnson's motivic repertoire. The extremes here are 'Nothing But Trouble', using the minimum, eleven different tones and 'You Take Romance', with the maximum, twenty six tones.

The two solos that contain the most tones, 1950s recordings, 'Little Rockin' Chair' and 'Nothing But Trouble' show a new development in Johnson's playing: the use of the E shape position, over and above C and A shape positions, for a cadential phrase. This will be examined below. The use of tones derived from this F position adds an extra seven tones to the two solos and perhaps show the influence of other guitarists with whom Johnson had contact. The motives have similarities particularly with those of Charlie Christian.

The soloist's choice of fretboard position inevitably influences the melodic resources that are available beneath the fingers. It is in part in the choice of playing his melodic material relative to the C and A chord form positions that Johnson's motivic repertoire differs from those players that focus on the E chord form position. This is especially true in relation to the selection, execution and resolution of blue tones.

3. 1. 5. Stemplots: period B.

The same data as above is now presented for the ten transcriptions taken from period B.

Volume two figs. 29 and 30 show the tone counts and the stemplots for period B. On the stemplots all examples are skewed with the exception of solo 15 'When You Feel Low Down'. The use of tones in this solo is more consistent and there is infrequent use of incidental tones.

Volume two fig. 31, the principal, secondary and incidental tones for period B as derived from the stemplots, shows a similar distribution of tones around the C and A shapes as in the earlier period.

3. 1. 6. Principal tones period B.

Volume two fig. 32 shows the number of solos in which specific fret positions occur throughout the ten solos during period B. The root note is the only tone that occurs as a principal tone throughout all ten solos. If the number of solos in which tones occur as principals are presented as a hierarchy we achieve the following table

TONE	STRING	TOTAL	RELATIVE TO SHAPE
1) Root	B	10	C
2) 5th	E	8	C AND A
3) 2nd	B	6	C
4) Inflected 2nd	B	6	C
5) 6th	G	5	C
6) 6th	E	4	A
7) 5th	G	3	C
8) 3rd	B	3	A
9) Root	E	3	G
10) 4th	D	1	C
11) #4th	D	1	C

Fig. 3 10. The number of solos in which tones occur as principal tones; period B.

Volume two fig. 33 shows the stemplots of the principal tones during period B, the accumulative totals of which are shown below:

TONE	STRING	TOTAL	RELATIVE TO SHAPE
1) Root	B	203	C
2) Infl. 2nd	B	191	C
3) 5th	E	150	C & A
4) 2nd	B	105	C
5) 6th	G	94	C
6) 6th	E	88	A
7) 3rd	B	75	A
8) Root	E	50	G & E
9) 5th	G	64	C
10) 4th	D	17	C & A
11) #4th	D	17	C & A

Fig. 3-11. Accumulative totals of principal tones, period B.

In period B the performer makes greater use of the inflected second on the B string. In part this is due to the 57 occurrences of this tone as an outlier in the improvisation on 'I Can't Sleep Anymore'. This outlier is a result of the opening repeated tone and the inclusion of the tone in a riff formation, as examined below.

In period B the performer descends the neck of the guitar to the E chord form at the third fret. This occurs in 'You Take Romance' and 'Little Rockin' Chair', both songs being in the key of G. In the earlier period Johnson had ascended to the F chord form in 'Mr. Johnson's Blues', chorus 2, 'Have To Change Keys to Play These Blues', chorus 1, and 'Blue Guitars', choruses 1, 2 and 4. All of these examples are in the key of D. Consequently the chord layout diagram on volume two fig. 31 is displaced, as compared to volume two fig. 15 with the E shape appearing to the left on figs 31 9 and 31-11.

It is also evident from volume two fig. 31 that in period B Johnson makes greater use of gestures that descend down on to the D and A strings. Having adopted the use of the plectrum in period B, the performer's style has evolved away from his earlier accompaniment technique, with its added bass notes, and focuses instead on a pure single-string melodic line, thus including runs that incorporate the lower strings within his melodic material.

3. 1. 7. Principal tone accumulation.

A comparison of the principal tone stemplots, (volume two figs. 17 and 33) shows little variation between the two periods. Variations that do occur are because

of riff figures where recurrent reiteration of a motive places unusual emphasis on particular tones, elevating them to principal tone status.

On the high E string the principal tones are the same except that the neutral third occurs as a principal in period A solo 'Blue Guitars', chorus 2. The instances of this tone occur only in this solo and it is an outlier. It occurs in a riff figure that is repeated eight times at the opening of the solo. Similarly the elevation of the 4th on the E string to the status of principal tone in the earlier period is due to its insistent use in a riff figure in 'Mr. Johnson's Blues', chorus 4.

The principal tones on B and G strings are the same for the two periods.

There is some variation on the D string. In period A the root note on the D string achieves the status of a principal tone because of its 13 articulations in 'Blue Guitars', chorus 2. This is as a component of the same riff which made the neutral 3rd on the E string a principal tone. The only other occurrence of the root note on the D string in period A is as an incidental tone in 'Blue Guitars', chorus 1. In period B this tone occurs as a secondary tone in two transcriptions, 'You Take Romance' and 'I ttle Rockin' Chair', in both of which it is as part of an E shape cadential figure.

In period B the tone counts for the 4th and #4th are identical as they always appear as a pair within the same motive. These two tones become principals in 'She's So Sweet', where they appear nine times, eight of which are in a riff figure in the opening two bars.

By eliminating those tones which have been identified as outliers or even oddities from the list of accumulative principal tones of the two periods the following table can be constructed:

E string:	5th	6th	Root	
B string:	Root	2nd	Inflected 2nd	3rd
G string:	5th	6th		

Fig. 3 12. Johnson principal tones.

The root note on the G string is associated with the G shape and will not be considered in this chapter.

These are distributed on the fretboard as follows:-

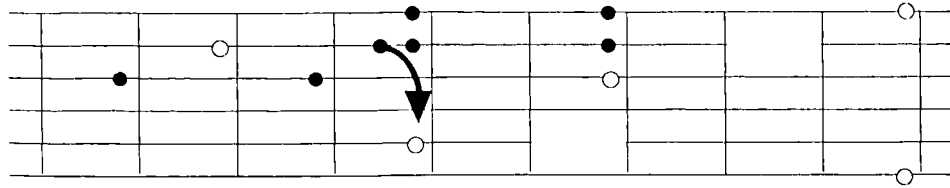


Fig. 3-13. Johnson principal tones layout.

To suggest that it is possible to reduce Johnson's entire performance technique, in essence, to the above diagram would be to exclude much of the subtlety and beauty of his playing, the specifics of which will be illustrated below, but it is evidence of the spatio-motor thinking that an improvising musician may employ, as it can be said that many of Johnson's characteristic motives are contained between these principal tones.

This tone layout can be divided into 3 areas, shown in the fig. 3 14, corresponding to the C shape, the A shape, and the G shape with a maximum four fret span. The numbers are the left hand fingering. The lower two of these are frequently connected by the performer by sliding with the third finger, as indicated:

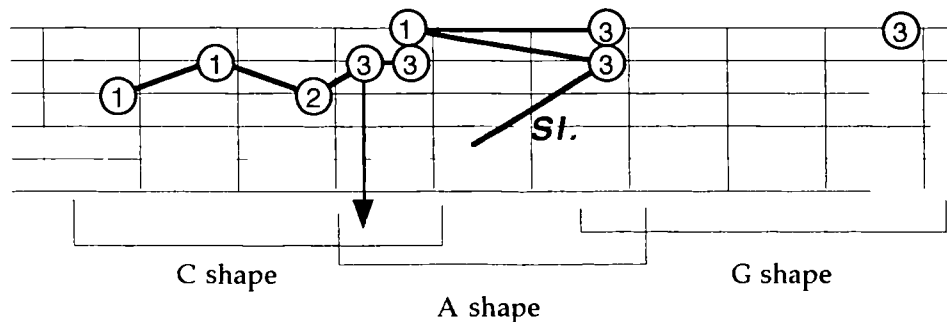


Fig. 3-14. Johnson left hand motion.

The physical layout of the guitar, with respect of the spacing of the frets, facilitates the placement of the left hand fingers each at a separate fret. Thus the four fingers cover a four fret span. As can be seen in fig. 3-14 many of Johnson's gestures exploit a motion that alternates between first and third fingers placed two frets apart. In the lower C position Johnson places the first finger on the root note using finger three to produce both the 2nd degree and the inflected 2nd degree, all three tones being on the B string. In the A position the first finger is located on the 5th on the E string and the third finger produces the 3rd and the 6th degrees on the B

and E strings respectively. The A shape presents a triangular form by alternation of 1st and 3rd left hand fingers in a 'toggle' motion. A change from C position to A position is characteristically achieved by Johnson placing his third finger on the 2nd degree on the B string and immediately sliding up the two frets to the 3rd on the B string.

In the C shape position left hand fingers 1, 2 and 3 form a triangular shape. The second finger is characteristically used to produce the 6th on the G string. The lowest tone (the leftmost tone on the diagram) is attained by stretching the 1st finger back down out of position by an extra fret. This is facilitated by a slight anti-clockwise twist of the left wrist.

3. 1. 8. Timeplots of principal tones.

The transcriptions cover a twenty seven year period. Timeplots are graphs that show the overall patterns, local deviations, long term changes and irregular fluctuations occurring in Johnson's use of principal tones over time. Consistency is evident when there is little variation in the line of the graph, whereas deviations indicate a shift in emphasis in the use principal tones. Idiosyncrasies are seen as peaks or troughs. Certain deviations on the graphs are striking and, having been identified, can be examined.

Three graphs, one for each of the top three strings of the guitar, show tone counts for each of the principal tones throughout the twenty two solos (volume two figs. 34, 35 and 36). Time is represented by the horizontal axis and principal tone counts by the vertical axis.

It can be seen on volume two fig. 34 that on the B string the occurrences of the root note, a pivotal point on which many of Johnson's motives are centred, appear fairly consistently across the full time-scale, as does the 2nd degree at a lower level. The highest peaks in the use of the root note on the B string are in solo 3 'I'm Not Rough' and solo 21 'Nothing But Trouble' with thirty one and thirty occurrences respectively. In 'I'm Not Rough' the tone occurs as a repeated note: nine times at bar three and eight times at bar five. The root note produced by the first left hand finger is pivotal in these solos, around which many of the phrases revolve. The lowest point in the graph of the root on the B string is in solo 11 'Blue Guitars', chorus 2 where it constitutes only 11% of the solo. Eight of the twelve bars of this solo are taken up with a riff figure, melodic in function, which throws uncharacteristic emphasis on tones related to the E shape. The root on the B string does not occur until bar 9:4, after which it becomes pivotal to the phrases.

It can be seen that both the 2nd and the 3rd on the B string occur consistently throughout the transcriptions but at a lower level than the root note.

Distribution of the inflected 2nd on the B string, which produces the neutral 3rd blue note, is clearly prone to greater deviation from one occurrence at solo 11 'Blue Guitars' chorus 2, to fifty seven occurrences in solo 22 'I Can't Sleep Anymore'. In the earlier period the mean for this tone is 7.75, and the median 7.5, from which it can be deduced that the tone usage in the early period is fairly consistent. Two thirds of the solo 11 'Blue Guitars', chorus 2 is taken up with a riff based on the E shape. The sole incidence of the inflected 2nd occurs in one of the remaining three bars, at 9:4.

The one peak in period A in solo 3 'I'm Not Rough' is because of the insistent motor rhythm that gives rise to repeated tones. The inflected 2nd is repeated eight times beginning at bar 2:2, and eleven times beginning at bar 10 during which the inflection of the string is gradually released. This is a characteristic device that became something of a cliché in the repertoire of many later guitarists.

During period B the mean for the inflected 2nd degree is 19.1 and the median 14. Clearly Johnson emphasises this tone in period B and it is apparent from the ascending line of the graph that in the transcribed solos from 1950 onwards the tone gains increasing importance. In the last three solos the frequency of the tone increases from 22% in solo 21 'Little Rockin' Chair', to 27% in solo 22 'Nothing But Trouble', to the extreme of fifty seven incidents at the recording session on the 3rd June, 1952, in solo 22 'I Can't Sleep Anymore', that is 41% of the complete solo. Each of these three solos displays the use of the repeated inflected tone. At bars 3 - 4 of 'Little Rockin' Chair' the tone is repeated seventeen times and is followed by nine repetitions of a riff that also incorporates the tone. In the first bar of 'Nothing But Trouble', after a pick-up, the tone is repeated eighteen times. This opening shows subtlety in the use of the tone: at bar 1 the string is inflected so that the pitch is raised almost a whole tone. Thus it is a slightly flattened, or blue, third. In the second bar there is a change of chord to the sub-dominant. Here Johnson lowers the pitch of the string so that the tone produced becomes the $\flat 7^{\text{th}}$ of that chord. In solo 22, 'I Can't Sleep Anymore', after an identical pick-up similar to that played in 'Nothing But Trouble', Johnson articulates the inflected 2nd forty eight times consecutively and follows it with the same nine times repeated riff which also occurred in 'Little Rockin' Chair'. All three of these solos are recorded within a two year period.

There is great variation on the top E string as seen on the graph at volume two fig. 35. The most striking variation is in solo 9, 'Misty Morning', where the top E string is not employed at all, which explains the trough in the graph.

On volume two fig. 35 there are deviations in the use of the 5th and 6th degrees on the E string, which show a general decline towards the solos of period B. Peaks and troughs in the graph tend to occur simultaneously with the two tones except for the highest peak in the 5th degree at solo 3 'I'm Not Rough'. These two tones are often interconnected as they are associated with Johnson's characteristic slide up to the A chord shape area, hence their mutually shared contours on the graph. The peak in solo 3 occurs because repeated tones are produced from the insistent motor rhythm.

There are two peaks in the distribution of the 6th on the E string. In solo 8 'Have To Change Keys To Play These Blues', chorus 5 it occurs in motives that are relative to both the G and A shapes and as a link between the two positions. In solo 14 'He's A Jelly Roll Baker' the same tone appears recurrently in two different, but related, riff figures examined below.

It can be seen from volume two fig. 36 that the use of the 5th on the G string becomes more consistent in period B. The two tones behave in similar fashion. The largest deviation in both the 5th and the 6th occur in the solo 9 'Misty Morning', where Johnson, employing the lower tessitura, incorporates these two tones with greater frequency.

3. 1. 9. Accumulative Totals.

The chart of accumulative totals for the two periods, A and B, is presented in volume two fig. 37. These indicate Johnson's complete 'scale' on the fretboard notation, along with the main anchor points of the left hand fingers, those pivotal tones about which Johnson focuses his motivic activity. In the light of this data the performer's general concept of 'blues scale' can be considered.

What is immediately evident from the chart is that the activity is mostly centred on the C and A chord positions. In periods A and B there are respectively excursions up and down the fretboard to the E shape. A move away from the C and A shapes up to the E position account for 9.3% of the total output of the early period. Excursions up to the G position in the later period constitute 4.2%, and down to the E position 1.7% of the output, a total of 5.9% away from the C and A areas.

In the earlier period a total of thirty four different tones are employed, including three different inflected tones. In the later period thirty different tones are used including only one inflected tone.

A comparison of the accumulative totals of the two periods, shown on volume two fig. 37, reveals that a key area of Johnson's improvisations is the tonic/dominant polarity on the B and E strings, these tones occurring for 19.9% and 14.5% respectively of the 1925 - 1929 solos, and 17.1% and 12.7% of the 1941 - 1952 solos.

Dowling suggests that:

Next to the octave the relationship of the musical fifth is most important... Many, but not all, of the musical cultures of the world accord the fifth a vital place in the structure of pitch, among them the European, Chinese, Japanese and Indian (generally cultures that tune stringed instruments by fourths and fifths) (1991: 35).

Johnson is often described as being a particularly 'melodic' performer and, in the light of this tonic/dominant polarity, and his treatment and resolution of dissonance, especially the blue notes, (examined in more detail below) one might conclude that Johnson is an adherent of a system of tonality which incorporates blues elements, rather than the modal player that one might expect from the received definition of the blues scale. Johnson's blues scale is closer to the jazz usage described above at 2. 1. 3. by Robinson as a major scale with added blue notes. There has been some critical confusion about the position of Lonnie Johnson in the evolution of the blues guitar. As was stated in chapter 1. 3. 3., some writers, notably Rudi Blesh, have suggested that Johnson is not an 'authentic' blues player. Indeed, from his urban origins in New Orleans, his performance with jazz musicians Armstrong, Ellington and Lang one might conclude that Johnson is more of a jazz player than a blues player, but one who adopted the blues form. As Santelli observed: "Johnson lived all his life in the city, and his guitar articulation reflected this" (1974: 215).

Within the main C and A chord areas those tones that only occur in one or other of the two periods, but not in both, are shown in the following table:

1925 - 1929	1941 - 1952
2 incidents of the 3rd on E string	
6 incidents of the #2nd on D string	
1 incident of the \flat 2nd on B string	
1 incident of the root on G string	
	17 incidents of the 4th on D string
	17 incidents of the #4th on D string

Fig. 3-15. Tones unique to each period.

3.2. Tone use.

The stemplots of accumulative totals for each of the tones, presented in volume two fig. 45, are divided by the same timespan into periods A and B. Volume two fig. 44 shows the overall principal, secondary and incidental tones drawn from these.

From Volume two fig. 44-1 it can be seen that the layout of the principal tones is similar between the two periods. There are a total of nine principals in period A as opposed to eight in period B. The tones that differ are: the root on the E string and the #2nd on the B string, which are principal tones in period A, and the 5th on the G string, which is a principal tone in period B.

In period A the root note on the E string is a principal tone (whereas it is a secondary tone in the later period). There is little difference between the relative frequencies of this tone between the two periods which accounts for 4.8% and 4.2% of the total for periods A and B respectively.

A chromatic move between the C and A chord positions, common in period A, results in the increased importance of the #2nd on the B which occurs for 3.2% of the output, as opposed to 1% of period B. In the latter period a slide to the third degree in the A position becomes more prevalent.

The 5th on the G string comes into prominence during period B, it being 5.4% of the total tone usage. In period A the same tone accounts for only 2.8% of the transcriptions.

A percentage comparison of the common principal tones is presented in the following table in hierarchical order:

TONE	STRING	PERIOD A	PERIOD B	TOTAL
Root	B	19.9%	17.1%	420
5th	E	14.5%	12.7%	309
Infl. 2nd	B	8.5%	16.1%	284
6th	G	9.8%	7.9%	201
2nd	B	8.8%	8.8%	200
6th	E	8.1%	6.6%	166
3rd	B	6.7%	6.3%	148

Fig. 3 16. Principal tone percentages.

The conclusion that can be drawn from this tone hierarchy is that, overall, Johnson's melodic concept is based on a pentatonic scale with the addition of the blue, or neutral third. This can be presented as a scale:

- Root - 2nd - neutral 3rd - 3rd - 5th - 6th.

This differs from the textbook definition of blues scale by the addition of the 2nd and 3rd degrees and by omitting the 4th and $\flat 7$ th degrees. Two other commonly cited blue notes the $\flat 7$ th and $\flat 5$ th occur, on two different strings, as secondary tones although both gain increased use in period B:

TONE	STRING	PERIOD A	PERIOD B
$\flat 7$ th	E	0.5%	1.3%
$\flat 7$ th	G	0.5%	0.4%

Fig. 3-17. $\flat 7$ th percentages.

Tone	Period A	Period B
$\flat 5$ th / E	0.6%	0.5%
$\flat 5$ th / D	0%	1.4%

Fig. 3-18. $\flat 5$ th percentages.

The interconnection of pairs of tones was examined for intervallic movement. Inspired by the such diverse concepts as Indian raga ascent and descent patterns and the jazz analyst's concept of 'tendency tones', whereby certain tones are perceived to have a tendency to resolve in a particular direction, volume two fig. 46 was devised. The data that is presented here is for the purpose of examining the behaviour of the performer's left hand fingers within the flow of his improvisation. The chart presents individually all of the tones within the C and A compass that are used by the Johnson throughout the transcriptions. The diagrams are presented hierarchically from the most commonly sounded tone in the entire transcribed output, the root tone on the B string with a total of 420 occurrences, to the least, the root note on the G string and the flattened second on the B string, with only one occurrence each.

The concept under scrutiny here is that the performer makes a conscious decision to begin his improvisation at a particular fret location on the fingerboard relative to the underlying tonic chord. From this tone, by left hand gestural activity, he proceeds to a second tone. The tones to which the performer moves are presented

on the chart, termed 'destination tones'. In order to devise this chart all of the occurrences of a particular tone are located on the transcriptions and the tones to which this tone is quitted are totalled up.

During the analytical process familiarity with a performer's style lends to an ability to make certain predictions as to the melodic material he might use in his improvisation. By observing the characteristics of the data accumulated from the research it is possible to construct a model of improvisational practice derived from the gestures of an individual performer.

It can be seen on volume two fig. 46 that the principal tones are followed, on average, by eleven different destination tones but one or two gestures tend to predominate. Other gestures are subordinate.

3. 2. 1. Principal tones.

Fig. 46-1. The Root Note on the B string.

- This tone occurs 217 times (19.9%) in the early period and 203 times (17.1%) in the later period.
- Volume two fig. 46-1 shows the tones to which the root note on the B string is quitted. The root note on the B string is shown as a white circle at the second fret. Destination tones are shown as black circles with a number alongside that represents the number of times that tone is approached throughout the transcriptions.

Here there is evidence of the flexibility that the improvising musician can achieve. There is not only one pathway that Johnson has taken from this tone, but fifteen. There is, however, a hierarchy that is present on this diagram:

- The performer quits the root note on the B string to the 6th on the G string a total of 107 times. This is a descending minor third that is achieved by placing the first finger on the root note, followed by the second finger on the 6th degree. This indicates that, based on the data under analysis here, there is a 31% (almost a third) probability that after sounding the root note on the B string the performer will quit that tone by descending to the 6th on the G string, with a 1 - 2 left hand fingering gesture.
- The second most common destination tone is achieved by a step up of two frets on the B string from the root note to the second degree. This is an ascending major second, which is achieved by a 1 - 3 fingering gesture. There is a 24% probability that the performer will quit the root note in this direction.

- After these two gestures there is a considerable drop off in the number of times that other gestures occur. The root note on the B string is quitted to the 3rd on the B string 39 times (11%), and the 5th on the E string (11%), and to the inflected 2nd on the B string (10%).

These diagrams begin to show us some of the various options that are open to the improvising musician within his oeuvre and within the constraints of the genre that he is performing. It can be seen here that gestures can be perceived as proceeding from one tone to another and at any point in a melodic line the performer may select a different pathway and change the course of the improvisation. Each individual tone provides a wealth of possibilities. Thus, it can be argued, motivic material is not generated by a continuous series of rigid, gestural movements that are set in stone.

Fig. 46.-2. The 5th on the E string.

- The second most prominent tone is the 5th on the E string. This tone occurs 159 times (14.5%) in the early period and 150 times (12.7%) in the later period.
- Volume two fig. 46-2 shows the destination tones that occur in the analysis from this tone. The tone here is represented by a white square. There are 16 different destination tones approached from this tone. The most common destination tone is achieved by a step up of a major second on the same string, achieved by a 1 - 3 finger gesture. There is a 30% probability that the performer will chose this direction. There is a considerable drop off to the next destination note: a descending minor third. This interval, also executed with a 1 - 3 left hand finger motion, steps down onto the adjacent B string. There is a 16% probability that the performer will choose this route.

Fig. 46-3. The Inflected 2nd on the B string

- This tone is a blue note that occurs 93 times (8.4%) of the early period, and 191 times (16.1%) in the later period. The tone is the second most common of the later period, taking precedence over the 5th.
- The tone is quitted to a total of six different destination tones. Two gestures predominate: the commonest course is to step down by two frets to the root note on the B string, (57%), with a left hand 3 - 1 movement. The second most common movement is to release the string inflection, and articulate the 2nd degree at the same fret (39%).

Extended usage of this tone in the later period is partly due to its use as a repeated tone, as in, for example 'I Can't Sleep Anymore'.

Fig. 46-4. The 6th on the G string.

- The 6th on the G string occurs 107 times in the early period, and 94 times in the later period.
- Diagram 46. 4 shows the destination tones from the 6th on the G string. There are 10 different destination tones. This tone is normally sounded by placing the second finger on the G string. The figures here are striking: the tone is quitted to the root note on the B string 141 times, that is a total of 71% of the occurrences of this tone resolve in this way, achieved with a 2 - 1 left hand finger motion.

This gesture is the most commonly recorded one in the complete output under consideration here.

Fig. 46-5. The 2nd on the B string

- The second on the B string occurs 96 times in period A, and 104 times in period B.
- It is quitted to a total of 10 different destination tones, most commonly by step to the root note on the same string. (117 times, which is 61% of the total)

This tone frequently appears as the 5th of the dominant seventh chord motives examined below.

Fig. 46-6. The 6th on the E string

- The 6th on the E string occurs 88 times (8.1%) in period A, and 78 times (6.6%) in period B.
- The tone is quitted to fifteen different destination tones, predominantly by step back down two frets on the same string to the 5th on the E string (52%)

It can be seen from the timeplot graph on volume two fig. 35 that the distribution of this tone varies greatly with two peaks occurring in 'Have to Change Keys To Play These Blues', chorus 5, and 'He's a Jelly Roll Baker'.

Fig. 46-7. The 3rd on the B string

- The 3rd on the B occurs 73 times (6.7%) in period A, and 75 times (6.3%) in period B.
- Chart 46. 7 shows that the tone is quitted to 11 different destination tones mainly by crossing onto the top E string and stepping back two frets to the 5th degree (68%) in a 3 - 1 gesture.

The tone occurs commonly as the 3rd of the tonic chord and the 6th of the dominant but only rarely as the major 7th of the sub-dominant chord. It can appear as part of a dominant motive (V⁴) or, in period B, in antecedent and consequent phrases to the dominant chord. The tone also appears commonly in riffs.

Fig. 46-8. The 5th on the G string

- The 5th on the G string occurs 31 times in period A (2.8%) and is a secondary tone, and 64 times in period B (5.4%) becoming a principal tone.
- There are seven different destination tones recorded for the 5th on the G string. Two gestures predominate: a step up of two frets to the 6th on the same string (56%), and an octave leap onto the top E string (32%).

There are three contexts in which the 5th on the G string frequently occurs; the I^{\flat} arpeggio, the x motive, and the dominant octave leap, all examined below. In 'She's So Sweet' the tone is also used as the first tone of a riff. This tone is a constituent of a three tone cell, A2 that is shown below, which is commonly used at the opening of cadences as in 'Mr. Johnson's Blues' (9:4), 'Mr. Johnson's Blues', chorus 4 (9:4), 'Have to Change Keys To Play These Blues', chorus 2 (10:2), 'He's a Jelly Roll Baker' (11:2), 'Keep What You Got' (10:2), 'I Can't Sleep Anymore' (10:3), 'You Take Romance' (10:3) and 'Little Rockin' Chair' (10:2).

Fig. 46. 9. The #2nd/ \flat 3rd on the B string.

- The \flat 3rd on the B string occurs in the two periods as follows:

Period A	35 (3.2%)	principal tone
Period B	12 (1%)	secondary tone
- This tone resolves to 5 different destination tones but predominantly resolves upwards by a semi-tone in a #2nd - 3rd resolution (66%). The second most common resolution is by step down to the 2nd degree (19%).

The tone is most commonly used in the A shape position as a consequent phrase to the V7 arpeggio figures. Here the tone is the #5th stepping up to the 6th degree of the underlying dominant chord. In each of these examples the tone is not considered a blue note rather it is an upward resolving chromatic appoggiatura.

Other examples feature the use of the tone in a motive that transverses the A and C shapes. In this context the tone appears as part of a descent from the 5th to the root note. These are examples of a descending resolution of this tone in a 3rd - \flat 3rd - 2nd - root descent (cell B9 below). This motivic type is typically employed against the tonic chord.

In the earlier period there had been far more liberal use of the \flat 3rd on the B string, where it occurs in antecedent and consequent phrases to the dominant chord described above.

3. 2. 2. Secondary tones

Secondary tones are presented in volume two fig. 46.

Fig. 46-10. The 4th on the E string

- The 4th on the E string occurs 15 times in each of the two periods under scrutiny.
- There are only 4 different destination tones. The commonest destination is to the inflected 2nd on the B string (46%).

The tone is commonly associated with the *x* motives and the IV group of motives, shown below, where the tone is the root of the sub-dominant chord.

Fig. 46-11. 5th on the D string.

- There are 4 different destination tones, mainly by chromatic descent on the same string (69%).
- Almost all examples of the 5th on the D string are as the root note of the dominant 7th arpeggio. They can be seen on volume two figs. 42 and 43.

The use of the 5th on the D string increases considerably in the later period: It occurs five times during period A, and 18 times during period B.

The 5th on the D string is associated in the later period with two other tones on the same string: the 4th and the \sharp 4th. Both of these occur seventeen times each. Neither are used in the earlier period. These three tones are played consecutively in a descending chromatic gesture from the root to the 7th to the \flat 7th at the bottom of all of the V7 arpeggio figures in period B.

The other examples which use these three tones as a chromatic group are at the opening of 'Lazy Woman Blues' and 'She's So Sweet' where the chromatic ascent/descent pattern: root - 3rd - 4th - \sharp 4th - 5th - \flat 5th - 4th - 3rd precede a I⁶ arpeggio; through this pathway the performer moves up to the top strings of the instrument. These two cells, shown below, are labelled J11 and J12.

Fig. 46-12. 4th on the D string.

- The 4th on the D string does not occur in the early period but occurs seventeen times in the later period.

- There are six different destination tones.

Fig. 46-13. #4th on the D string.

- The #4th on the D string does not occur in the early period, but occurs seventeen times in the later period.
- There are two different destination tones: chromatic ascent (29%), and chromatic descent (71%).

Fig. 46-14. \flat 7th on the E string.

- The \flat 7th on the E string occurs five times in the early period, and 15 times in the later period.
- The tone has two different destination directions: a semi-tone descent, which occurs in all but one example, and a minor third descent on the same string.

The \flat 7th on the E string is a blue note which first appears in the transcriptions in 'Mr. Johnson's Blues', chorus 2 at bar 7:4. In all of the cells that employ the \flat 7th it is the highest tone and is followed by a descent to the 5th on the E string: \flat 7th - 6th - 5th. The \flat 7th on the E string is the opening tone of 'Have to Change Keys To Play These Blues', chorus 1 solo. When the \flat 7th occurs in bar 4 of a solo, as in 'Have to Change Keys To Play These Blues', chorus 2, and 'Blue Guitars', chorus 4 it creates the aural effect of transforming the chord into the \flat 7th as a transient modulation to the sub-dominant in the ensuing bar. This is particularly felt in the latter of these two solos with the dramatic ascent to the \flat 7th on the E string and its metric placement on the first beat of the bar. The tone is particularly emphasised in 'He's a Jelly Roll Baker' which opens with a three times stated riff that twice incorporates the \flat 7th on the E string.

Fig. 46-15. 3rd on the D string

- The 3rd on the D string occurs seven times (0.6%) in the early period, and thirteen times (1.1%) in the later period.
- The tone has three different destination tones, predominantly by movement onto the next string up, and stepping back two frets (70%).

All of the examples of the 3rd on the D string are associated with I⁶ arpeggios (volume two fig. 40). The opening riffs of 'Lazy Woman Blues' and 'She's So Sweet' both use a chromatic motive as an antecedent phrase to a I⁶ arpeggio. These two riffs along with all four of the 'Misty Morning' motives also contain the #2nd - 3rd resolution on the D string.

Fig. 46-16. #5th on the G string

- The #5th on the G string occurs three times during period A, but is a secondary tone in period B with twelve occurrences.
- The tone has three destination tones, predominantly by an upward step of one fret to the 6th on the same string (70%).

This tone is used in two different contexts; as a #2nd - 3rd appoggiatura against the sub-dominant chord, sometimes occurring in the 4th bar in anticipation of the IV chord in the ensuing bar, and as a passing tone in a chromatic, descending gesture. In this latter form the phrase can appear at a transition between chords. The use of the tone as a #2nd - 3rd appears in some of the examples of the *x* motive seen below.

Other examples are related to the *x* motive in containing the #2nd - 3rd in the context of the sub-dominant chord. All of these examples contain the same four tones in different sequences.

Fig. 46-17. #5th on the E string.

- #5th on the E string occurs as incidental six times (0.5%) in period B. In the earlier period the #5th on the E string has eleven occurrences (1%).
- There is only one destination tone which is by an upward step of one fret to the 6th degree.

The tone occurs as both a passing tone and as an auxiliary tone. It frequently occurs as an antecedent to the V7 arpeggio motives.

The first tone of 'He's a Jelly Roll Baker' is the #5th appoggiatura which resolves onto the 6th. This idea is extended in 'She's So Sweet' with a double appoggiatura, #2nd - 3rd - #5th - 6th. 'Mr. Johnson's Blues' features a #5th in a convoluted riff at bar 5:1 which is immediately repeated with variation. The first version features the tone as an auxiliary: 6th - #5th - 6th, the variation begins with the tone as an appoggiatura.

In 'I'm Not Rough', bar 6:4 the tone occurs against a sub-dominant chord, of which it is the #2nd, in the ascent 2nd - #2nd - 3rd - root. The complete IV motive is shown at IV², volume two fig. 41. Of the other two examples in the 'I'm Not Rough' solo the second, at bar 8:4, (V³) is a familiar antecedent to the V7 arpeggio as used by the performer in the same manner as in the later period, examined below. On this solo Johnson's improvisation is less assured in that in the previous articulation of the #5th on the E string in bar 7 it sounds as if he is playing the motive as if approaching

the V7, but in fact he is a bar too early. Thus here the same motive resolves back to the tonic.

The motive at 8:4 of 'Move Over' is at the transition from the tonic chord to the dominant and the melodic line is an ascent to the 9th of the dominant, in which the #5th of the tonic is the tone that precedes the 9th of the dominant, (the tone occurring on the first beat of the bar). This 9th then resolves back to the root of the dominant.

The motive in 'Have To Change Keys To Play These Blues', chorus 1 is melodic ornamentation against the tonic chord and the tone is a passing note between the 5th and 6th degrees, then a lower auxiliary beneath the 6th before a resolution back to the 5th: 5th - #5th - 6th - #5th - 6th - 5th.

Fig. 46-18. Root on the A string.

- This tone occurs 13 times in the transcriptions, only two of which are in period A.
- There are 4 different destination tones.

Most of the examples of the root note on the A string are associated with the I⁶ arpeggio whereby there is a step onto the 3rd degree on the G string. The only two exceptions are in 'Lazy Woman Blues' and 'She's So Sweet', both of which open with the root on the A string followed by a chromatic gesture on the D string that precedes a I⁶ arpeggio.

Fig. 46-19. Major 7th on the G string.

- This tone occurs sixteen times in the transcriptions.
- There are three different destination tones, of which the descent by a major third is the most common (75%).

The major 7th on the G is associated with the dominant chord of which it is the 3rd and as such occurs in the dominant chord motives shown on volume two figs. 42 and 43.

Fig. 46-20. #4th on the E string

- In period A the #4th on the E string has seven occurrences (0.6%), and occurs six times (0.5%), in period B.
- There are two destination tones; a one fret chromatic step in either direction. The descent predominates.

All examples of the #4th in the post-1941 period are in *x* motives, whereby the tone is a passing tone in the descending sequence 5th - \flat 5th - 4th - neutral 3rd - root.

The first occurrence in 'Move Over' varies from the above in that the motive starts with four tones of an *x* motive but changes direction so that the \flat 5th becomes, enharmonically, the #4th: 5th - #4th - 5th - #5th - 6th. (Example IV³). The second occurrence of this tone in 'Move Over' is in the second cadence, in a motivic gesture that is related to the *x* descent: 5th - \flat 5th - 4th - #2nd - 3rd - 2nd - root.

Fig. 46-21. 4th on the B string.

- The 4th on the B string is a secondary tone with thirteen occurrences throughout the transcriptions.
- Twelve of the thirteen occurrences share the same destination tone.

The 4th on the B string is associated with the dominant chord. The 4th degree of the key is the \flat 7th, of the dominant chord. The only one exception to this is in 'I'm Not Rough' at bar 6:4, where the tone is the root note of the sub-dominant chord in a passage that shifts from IV to I.

Fig. 46-22. \flat 7th on the G string.

- The \flat 7th on the G string occurs five times in period A but only once in period B. Because of the distribution of values the tone is a secondary tone in the earlier period A.

The tone appears in two different harmonic contexts; against the tonic chord as a form of lower auxiliary note to the tonic: root - \flat 7th - root. (It is extremely common for Johnson to play a similar gesture where the 6th is used in preference to the \flat 7th). The tone also appears as an upper auxiliary to the 5th: 5th - \flat 7th - 5th. The former occurs twice, in 'Have To Change Keys To Play These Blues', chorus 2 at bar 4:1, and also in 'She's So Sweet' at bar 4:1. In both of these examples, (separated by a 21 year gap), the gesture has a tonal function as a \flat 7th chord, a transient modulation to the sub-dominant chord of bar 5. The latter example occurs in 'Misty Morning', bar 8:4, cell O10 (shown below).

The same tone also occurs in a different harmonic context, that is against the dominant chord. In two examples, 'Have To Change Keys To Play These Blues', chorus 2, bars 8:4 and 9:2 the tone is the second tone in a motive where it functions as a #2nd of a #2nd - 3rd resolution of the dominant motive seen in volume two fig. 42 (V⁴ and V⁵).

Fig. 46-23. #2nd on the D string.

- There are six occurrences of the #2nd on the D string, all in the early period, all of which are in the 'Misty Morning' solo.
- All six resolve upward by one fret, and are part of a I6 motives.

3. 2. 3. Incidental Tones.

The examination of the function of individual tones shows the uniqueness of certain fingering strategies and the universality of others. This can perhaps be explained by suggesting that some tones are used in an exploration of an area of the fretboard that the performer pursued for a short period of time whereas others are developed over an extended period of his active career. The use of the term 'incidental' does not suggest insignificance. These tones add colour and character to Johnson's improvisation.

Fig. 46-24. Inflected 6th on the E string.

- During period A this tone appears six times, but does not appear in transcriptions for period B. All of the occurrences are in 'Have To Change Keys To Play These Blues', chorus 5.
- There are two destination tones.

Fig. 46-25. 3rd on the E string,

- The 3rd on the E string occurs twice during the early period.
- There is only one destination tone.

The 3rd on the E string appears in 'I'm Not Rough' in the pick-up before bar 1. It is approached from a semi-tone below by the inflected 2nd on the B string. The opening inflected string is articulated twice with a slight raise in pitch on the second time. Thus the three tone group present a 'bluesy' slur up to the 3rd. The same gesture appears at bar 3:4 in a repetition of the opening phrase. This is cell J9, below.

Fig. ♭2nd on the B string, and the Root on the G string

In period A two tones occur only once each: ♭2nd on the B string and the root on the G string

The ♭2nd on the B string occurs at the entry in the wrong key at the opening of 'Misty Morning' described above. It is ironic that an apparent error in performance adds credence to the argument that improvisation is inherently connected with practised fingered gestures. The greatest deviations on the stemplot in volume two fig. 34 occur at solo 9 'Misty Morning' (volume two fig. 10). Recorded with Duke

Ellington the solo is something of an oddity in the transcribed output in that certain features are so uncharacteristic that one would be forgiven for thinking this was not Johnson playing at all. However the timbre of the guitar and those characteristic features which are present, notably the use of the C position, are enough to indicate otherwise. Certain trademarks are lacking: there is only one riff (a three tone figure at bar 6, repeated only once); The solo remains in the C position, does not shift up to the A position, and makes no use of the top E string. At the opening of the solo the performer apparently makes an entry in the wrong key with three tones: the 3rd, $\flat 3$ rd, and $\flat 2$ nd (the sole incidence of the $\flat 2$ nd in the transcriptions under consideration here). These three tones comprise a typical left hand fingering pattern that Johnson had used some six weeks earlier at the opening to 'Move Over' (volume two fig. 5), also recorded with Ellington. However, in the 'Move Over' solo the tones form a descent to the root: $\flat 3$ rd, 2nd and root. It is evident that in the 'Misty Morning' solo the performer's entry is a fret too high in the key of $B\flat$ rather than A producing a strange bi-tonal moment, (or an early example of 'outside' playing). As the performers at that recording session must have been aware of the mistake at the playback it seems strange that there was not a second take of the tune. Instead of his usual motives Johnson explores a region lower down on the strings, and recurrently (6 times) plays a motive that incorporates a #2 - 3 resolution on the D string, a motive that is not taken up elsewhere in the transcriptions. One could speculate that the mistaken entry in the wrong key had a disturbing effect on the performer or else he had, prior to recording, decided to explore this new motivic device thus his playing is less assured than is customary and contains fewer of his characteristic traits.

The root on the B string occurs in a one-off dominant motive at bar 8:3 of the solo 'Have To Change Keys To Play These Blues', chorus 2, shown at appendix figure 42, example V4.

3.3. Left hand finger strategies.

The performance of two different consecutive tones on the guitar requires a physical move of the left hand. Interval patterns taken from Johnson's transcriptions were shown in volume two fig. 46, described above, where it can be seen that certain gestures occur with greater frequency than others. A hierarchy of the predominant movement patterns derived from fig. 46 is presented in volume two fig. 47. This facilitates a comparison of left hand movement patterns employed by the performer on the guitar in the course of performance.

In chapter 2. 2. 5 it was discussed that Bailey sub-divided left hand movement on the Afghan *dutar* into "cluster patterns" identifying a "three-finger, two-component mode of operation where the second or third finger is used to stop frets above that held by the first finger, but the third is not used against the second"

(1985: 255). The following section considers, in a similar manner, movement patterns in Johnson's improvisatory practise.

Volume two fig. 47, sub-divided into five diagrams, shows the predominant gestures in hierarchical order. The chart is subdivided as follows:

Diagram	Number of gestures
47. 1	More than 100
47. 2	80 - 100
47. 3	50 - 80
47. 4	30 - 50
47. 5	20 - 30

Fig. 3-19. Johnson prevalent movement patterns.

It can be seen that the gestures of fig. 47 are labelled alphabetically: the most common, A, is an ascent from the 6th degree to the root, executed with a left hand two - one fingering.

There are a total of twenty one different gestures presented on the chart, which are sub-divided by left hand fingering strategies into nine different categories.

Left hand fingering.	Number of occurrences.
3 - 1	374
1 - 3	320
1 - 2	157
2 - 1	141
3 - 3	101
3 - 2	40
4 - 1	32
2 - 3	31
1 - 4	29

Fig. 3-20. Johnson left hand fingering.

The majority of the gestures, a total of 1,053, couple the index finger with one of the other fingers: The coupling of fingers one and three occurs 694 times, one and two 298 times and one and four 61 times. In contrast the coupling of fingers two and three only occurs 71 times. The coupling of fingers three and four, which does not occur in the predominant gestures, does occur in localised figures examined below. It is evident that the physical construction of the hand, especially when interfacing the

surface of the guitar, makes couplings of certain pairs of fingers easier than others. An alternating motion of finger one with fingers two, three or four is easier than coupling finger two with fingers three or four, and an alternating motion between fingers three and four is more difficult. This aspect is not without effect on the development of the improvised guitar solo as the performer has, through practise, learned to exploit these gestures within his tone selection.

3. 3. 1. The left hand gesture 3 - 1

The most common movement strategy employed by Johnson is the left hand 3 - 1 motion that accounts for 30. 5%, that is almost a third, of his prevalent movement patterns. The gesture occurs in three different string sets and in four different contexts. It occurs as a two fret descent on the same string in the three following contexts:

Tones produced	String set	Gesture	Total occurrences
1) 2nd - root	B string	gesture B	117
2) 6th - 5th	E string	gesture E	84
3) inflected 2nd - root	B string	gesture H	75
4) 3rd - 5th	B - E strings	gesture D	98

Fig. 3 21. left hand 3 - 1 gesture.

The first two are identical movement strategies executed on different single strings. Gesture B is a step back to the root note, from the 2nd on the B string to the root on the B string, executed with the 3 - 1 fingering gesture it occurs 117 times throughout the transcriptions. Gesture E is composed from the same move on the E string. Gesture H, comprising the same two fret locations as gesture B, is compounded by the inflection of the first note.

The same left hand fingering strategy occurs as an ascending melodic pattern, gesture D, which produces a minor third on adjacent strings.

3. 3. 2. The left hand 1 - 3 gesture.

The reverse of the 3 - 1 motion, that is a 1 - 3 left hand motion, accounts for 26.1% of the total. Thus these two gestural categories total over half of Johnson's prevalent movement strategies considered here.

The left hand 1 - 3 gesture occurs on three different string sets and in six different contexts. It occurs as a two fret ascent on the same string:

Tones produced	String set	Gesture	Total occurrences
1) 5th - 6th	E string	gesture F	83
2) Root - 2nd	B string	gesture G	82
3) Root - 3rd	B string	gesture M	39
4) Root - inflected 2nd	B string	gesture O	34
5) 5th - 3rd	E - B strings	gesture L	44
6) root - 5th	B - E strings	gesture N	38

Fig. 3-22. left hand 1 - 3 gesture.

The first four of these gestures are ascending patterns on a single string. Examples 1, 2 and 4 of these gestures are the reverse of the examples 2, 1 and 3 respectively of the 3 - 1 strategies listed above.

Example 3, the root - 3rd movement (gesture M), is Johnson's principal position changing strategy whereby the performer places his 3rd finger on the 2nd degree and slides up the two frets to the 3rd. The reverse of this, a 3rd to root descent, does not occur as a prevalent movement pattern.

In examples 5 and 6 the 1 - 3 movement strategy occurs between adjacent strings in a descending minor 3rd (gesture L) or ascending perfect 5th (gesture N).

3.3.3. The left hand 1 - 2 gesture.

The left hand 1 - 2 gesture only occurs in two contexts a minor 3rd descent between adjacent strings (gesture C) and a two fret major 2nd ascent on the G string (gesture K). The latter movement is notable in that the performer is covering a three fret span by stretching with fingers one and two, which Johnson does in order to reach back from the fret position at which his index finger is located in order to reach the 5th degree on the G string. The location of the this finger is important because, as Bronwski points out "We can oppose the thumb precisely to the forefinger, and that is a special human gesture" (1974: 417).

Tones produced	String set	Gesture	Total occurrences
1) Root - 6th	B - G strings	gesture C	107
2) 5th - 6th	G string	gesture K	50

Fig. 3-23. left hand 1 - 2 gesture.

In contrast, it will be seen, this type of gesture is not found in Walker's oeuvre. Walker contains his movement strategies within a four fret span, his index finger anchored at a fret location, and does not reach back out of position. Walker could employ a similar gesture to reach back one fret from the flattened 3rd on the G string, relative to the E position, thus achieving the 2nd degree, but chooses not to make this type of movement. Other players, Charlie Christian for example, do make use of this gesture against the E position.

3. 3. 4. The left hand 2 - 1 gesture.

The left hand 2 - 1 movement strategy only occurs in one context but it is the prevalent movement pattern in this analysis.

Tones produced	String set	Gesture	Total occurrences
6th - root	G B strings	gesture A	141

Fig. 3 24. left hand 2 - 1 gesture.

The most common gesture that Johnson employs is a step up from the 6th on the G string to the root note on the B string, achieved by a 2 - 1 left hand fingering sequence, that occurs 141 times in the body of work under analysis here.

It can be deduced from this that certain musical patterns, which bear a close relationship to the human motor system, when realised on an instrument may occur in different musical styles and in different cultural settings. The four types of gesture discussed above correlate to the Bailey's "cluster patterns". Furthermore all of the gestures described above are in accord with Bailey's description of a "three-finger, two-component mode of operation where the second or third finger is used to stop frets above that held by the first finger" (1985: 255).

It is not without significance that these types of gesture are by far those most commonly employed by Johnson. It is evident from this that although the tone selection constituting the melodic line is undoubtedly influenced by musical style, another factor is also at work, that is, the selection of a sequence of tones which constitute a melody can be significantly influenced by the physical properties of the hand that produces them.

3. 3. 5. The left hand 3 - 3 gesture.

Two gestures are produced using only the third finger.

Tones produced	String set	Gesture	Total occurrences
1) 2nd - inflected 2nd	B string	gesture S	30
2) 5th - inflected 2nd	E - B strings	gesture U	20

Fig. 3-25. left hand 3 - 3 gesture.

Gesture S is the re-articulation of the same string at the same fret location. The first tone is the 2nd degree on the B string, then the string is inflected and re-articulated to produce a blue third.

Gesture U is more complex whereby the performer, after producing the 5th degree on the top E string, shifts his third finger across on to the adjacent B string. This latter tone is then inflected.

3. 3. 5. The left hand 3 - 2 gesture.

The left hand 3 - 2 strategy is used in two gestures.

Tones produced	String set	Gesture	Total occurrences
1) 5th - 6th	E - G strings	gesture T	20
2) 2nd - 6th	B - G strings	gesture W	20

Fig. 3-26. left hand 3 - 2 gesture.

These two related gestures occur twenty times each. The gestures are related in that they feature a one fret step back towards the nut, culminating on the same tone. In gesture W the two tones are on adjacent B and G strings and gesture T features a skip over the B string. The gestures comprise a complex left hand movement which couples the third finger with the second. This type of gesture does not occur as a principal movement pattern in the Walker analysis.

3.3.6. The left hand 4 - 1 gesture.

The left hand 4 - 1 strategy (gesture P) is a descending octave leap between dominant tones on the E and G strings which is executed by skipping the B string. It occurs 32 times.

3.3.7. The left hand 2 - 3 gesture.

The left hand 2 - 3 strategy is used in one gesture (Q) a chromatic ascent on the B string between the #2nd and 3rd degrees. It occurs 31 times.

3.3.8. The left hand 1 - 4 gesture.

The left hand 1 - 4 strategy (gesture R) is the reverse of the 4 - 1 gesture P. It is an ascending octave leap between dominant tones on the G and E strings which is executed by the plectrum skipping across the B string. It occurs 29 times.

3.4. Gestural Analysis

A performer's individual code is formed by characteristic idiosyncrasies that form the backbone of his style. The analytical process, which grants familiarity with a style, exposes motivic material which is identified through its repeated or insistent use. A motive, a series of tones, can be represented by movement strategies or fingering patterns as they appear on the instrument. Motives occur with variation, only rarely are repetitions seen to be identical. In the course of this analysis seven groups of motives emerged as characteristic elements in Johnson's output. These may be initiated by harmonic thinking, or by an insistent right hand motor rhythm. Some occur throughout his career whereas others are localised to one or two solos.

In the act of improvising, the fingers of Johnson's left hand traverse the guitar strings via a series of tone pathways which produce melodic phrases. These gestures have developed out of continued practise. For the analyst, however, the cataloguing of such motives can be compounded by variation; figures are frequently not identical, but vary in detail by the addition of a tone at the beginning or the end, or by the repetition or alteration of an internal tone, or tones, within the body of a phrase.

The seven specific groups of recurrent characteristic melodic phrase types that have been isolated are as follows:

- The x motive
- Harmonic motives
- Octave leap on the dominant note
- Repeated tones
- The riff
- E and G shape phrases
- Linear phrases

The last two groups are not considered in this chapter as they utilise areas other than C and A chord shapes:

Volume two fig. 38 shows the location of these motives within the model throughout the transcriptions of Johnson's solos 1925 - 1952. It can be seen that three characteristic ingredients in his style; x motives, harmonic motives and cadential figures, are present from the earliest solo, 'Mr. Johnson's Blues' recorded on Wednesday 4th November, 1925, and occur throughout the solos.

3. 4. 1. The x motive.

One particular characteristic motive that has been identified occurs and evolves throughout Johnson's career from his earliest guitar solo recording. This particular group of motivic variants has been labelled x (volume two fig. 39). The complete x motive comprises two motivic cells, labelled x^a and x^b . These occur in isolation in the early period but have come together by 1942 as the complete x motive in solo 15 'When You Feel Low Down' at bar 5:4. On volume two fig. 39, x^a and x^b motives appear side by side in two columns separated by a dividing line until they are brought together as the complete x motive - x^1 .

The left hand column of volume two fig. 39 shows various forms of the x^a motive which increase in complexity. In its simplest form (fig. 3-27) the motive, executed with a 2 - 1 - 3 left hand finger sequence, traverses the top three strings of the guitar in a three note ascent from the 6th degree on the G string to the 5th degree on the E string via the root note on the B string. This motive thus contains three of the overall principal tones. Root note markers on the diagram locate the cell within the C chord area.

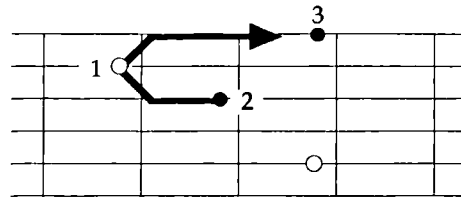


Fig. 3-27. The x^a motive.

It would appear that the gesture has arisen out of harmonic thinking. The tones are the final three of an ascending added 6th arpeggio such as that performed in the 1928 'Move Over' solo, seen at figure 3-28.

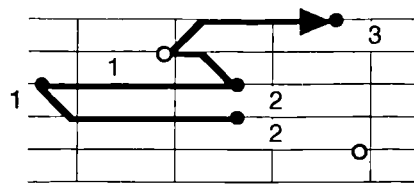


Fig. 3-28. The added 6th arpeggio.

In the motive x^{a2} (volume two fig. 39) the first tone of the three tone grouping (the 6th degree) is preceded by a chromatic step up from the #5th degree. In the succeeding example, x^{a3} , the three tone grouping is followed by a step down from the 5th to the 4th on the top E string.

These latter two examples conform to Bailey's (1985: 254) definition of a 'cluster pattern' in that they occupy a single position on the fretboard. The first finger is anchored at a fret position and fingers two and three are utilised to fret tones above that position. In both of these examples the first finger changes strings. Furthermore in these examples the first finger alternates with fingers two and three respectively. Thus the fingering pattern at x^{a2} is 1 - 2 - 1 - 3, and at x^{a3} is 2 - 1 - 3 - 1.

The three tones, the 6th, root and 5th of the tonic chord, also form the 3rd, 5th and 9th of the sub-dominant chord which occupies bars five and six of the standard twelve bar blues model. It can be seen from the data beneath the diagrams on volume two fig. 39 that all of the x^a examples are played against that chord. Half of the eight examples begin at the same metric position, in anticipation of the sub-dominant chord, at bar four beat four. All of these examples are from solos that were recorded in the 1940s; an indication that the performer's style was becoming more formalised in the later period. The motive is commonly repeated as a riff against the sub-dominant chord with between two and six repetitions.

Gesture x^a4 is more complex, opening with a toggle action between the root note on the B string and the 6th on the G string, the fourth finger then frets the 5th on the top E string freeing the third finger to play an inflected 2nd on the B string. The complete fingering for the gesture is 1 - 2 - 1 - 4 - 3.

In the x^b motive (fig. 3-29) is a descending pattern the characteristic feature of which is a chromatic descent on the E string from the 5th degree to the 4th and an eventual return to the tonic, in this case via a blue note, the inflected 2nd on the B string. The left hand fingering for the chromatic descent is 3 - 2 - 1 and the further descent to the tonic is executed with a 3 - 1 fingering pattern.

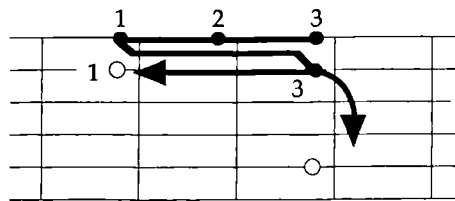


Fig. 3-29. The x^b motive.

In x^b3 the inflection of the 2nd degree is released and an extra tone, the 2nd degree, is articulated. Both x^b2 and x^b3 conclude with a toggle action between root and 6th degrees. After the initial 3 - 2 - 1 descent the remainder of the left hand fingering comprises an alternating motion of the first finger with the second and third fingers.

From 1928 onwards the x^b motives are typically associated with the sub-dominant chord. The chromatic descent 5th, \flat 5th and 4th of the tonic chord form the 9th, \flat 9th and root of the sub-dominant chord.

In the complete x motive the two fragments x^a and x^b are combined. The motive has different forms, no two being identical, that contain elements derived from the above ascent and descent patterns. Six variations of the x motive are shown arranged in order of complexity.

The first full statement of the x motive appears in the 1942 solo 'When You Feel Low Down', here used against the sub-dominant chord, at bar 5:4 (example x^6). The first five of these gestures all use fingering patterns that alternate the first finger with the second and third fingers, except for the 3 - 2 - 1 descent (x^1 - x^5).

The construction of cell x^5 shows a snapshot of the creation of a novel action. In examples x^1 - x^4 the performer's fingering strategy, after the 3 - 2 - 1 descent on the E string, is to cross to the B string and play a 3 - 1 descent back to the root note. x^5

opens with an identical gesture, but here Johnson then places his third finger at the same fret location on the B string and, rather than descending to the root note, slides up two frets to the A shape position. Using this tone as a 'pivot' tone, Johnson is thus able to take a different course of action.

The complete *x* motive is played against the dominant chord at bar 9 in *x*², *x*⁴ and *x*⁵. Here these same tones form the 9th, 4th, root, 7th and \flat 7th of the dominant chord.

In a different fingering strategy, as is seen in *x*⁶, Johnson omits the root note in the ascent. The resulting left hand fingering pattern is 1 - 2 - 3 - 2 - 1.

The *x* motive has become a common component, indeed, something of a cliché in the blues repertoire. It was adopted by B. B. King, and thence became a part of the blues vocabulary, still in use today. It is the motive that was examined in Clapton's repertoire in chapter 2. 2. 5.

3. 4. 2. Harmonic motives: I⁶ - IV - V.

3. 4. 2. 1. I⁶ motives.

Harmonic motives are fingered responses to a particular harmony. They show the performer's sensitivity, in his choice of tone selection, to the underlying chord structure. Johnson has developed arpeggio-based motives for each of the three triads, I, IV and V, of the blues model, of which the dominant chord group of motives are the most common and varied. The harmonic motives are strikingly sophisticated in terms of their left hand fingering structures.

I⁶ motives are shown in volume two fig. 40. The earliest I⁶ fragment occurs in the 1928 recording 'Move Over' (seen at volume two fig. 40 example I⁶.1 and fig. 3-17 above). It features an ascent, 3rd - 5th - 6th - root - 5th, accomplished by alternating finger 1 against fingers 2 and 3. Typically in most of the I⁶ motives the first finger is stretched back out of position to reach the 5th tone on the G string. Thus the first finger is used at two consecutive fret locations without a change of position.

The 'Misty Morning' solo features six I⁶ motives in descending or ascending forms. The three times stated I⁶.2 descends from, and ascends back to, the root on the B string via the #2nd - 3rd on the D string. The entire motive is accomplished by toggle action between first and second left hand fingers. In the 'Misty Morning' solo an octave descent is followed immediately by an octave ascent (examples I⁶.3 and I⁶.4). The same pattern is taken up in the 1952 solo 'I Can't Sleep Anymore' (examples I⁶.5 and I⁶.6).

It can be seen how a single string melodic sequence can be influenced by physical chord forms inherent on the guitar. When the I⁶ motive includes the root note on the A string (volume two fig. 40 examples I⁶.3, 4, 5, 6, 7, and 9) the left hand fingering is based on the underlying C major chord shape: the third, second and first fingers on the root note on the A string, the 3rd on the D string and the root note on the B string respectively.

In five of the transcriptions the arpeggio affirms the return of the tonic chord at bar 11 beat 1. The I⁶ arpeggio appears three times in 'Lazy Woman Blues': at the opening and again at the return to the tonic chord at bars 7 and 11. It is played at the final arrival of the tonic chord in 'Keep What You Got', 'She's So Sweet', and 'I Can't Sleep Anymore'. The motive I⁶.6 occurs four times in transcriptions from the period B (after 1941) and the motive I⁶.7 occurs five times, all in the same rhythmic

pattern. This is an indication that the performer's improvisation becomes more formalised in period B.

3. 4. 2. 2. IV motives.

As described above the *x* motives appear as sub-dominant chord motives. Other sub-dominant motives appear in the transcriptions (volume two fig. 41 Examples IV¹ - IV⁹). IV motives can be of great complexity, as in, for example, IV², IV³ and IV⁴, which traverse C and A chord forms. All examples are shown relative to the E shape of the sub-dominant chord.

3. 4. 2. 3. V motives.

Dominant chord motives, based on arpeggios, are shown on volume two figs. 42 and 43. A common characteristic of the dominant chord motives of the early period is a descent through the arpeggio: $\flat 7$ th, 5th, 3rd, root, executed with a 4 - 1 - 2 - 3 left hand fingering sequence. It is seen in its basic form in 'Blue Guitars', chorus 2, fig. 3-30, where the dominant note, shown as a white diamond, indicates that the gesture takes place relative to the E form of the dominant chord.

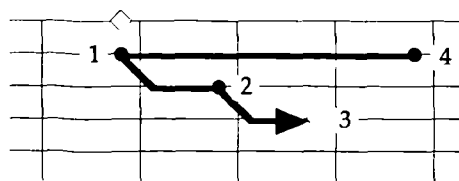


Fig. 3-30. V motive, 'Blues Guitars', chorus 2.

This descending arpeggio is incorporated in the dominant chord motives in 'Mr. Johnson's Blues' (V¹, V²), 'I'm Not Rough' (V³), and 'Have To Change Keys To Play These Blues', chorus 3 (V⁶).

A more chromatic approach is taken up in 'Have To Change Keys To Play These Blues', chorus 2 (V⁶), which is not developed anywhere else in the transcriptions. Another variation, occurring in 'Blue Guitars' choruses 1 and 4 (V⁷), feature a slide from the dominant note on the G string up to the 3rd of the dominant chord. This example is also exceptional in that it contains the $\sharp 5$ th of the dominant chord.

In period B (volume two fig. 43) all of the solos contain the more stylised treatment of the dominant motive in which the earlier fragment is extended by the addition of a chromatic descent to the $\flat 7$ th in the lower octave: $\flat 7$ th, 5th, 3rd, root, 7th, $\flat 7$ th. This is seen in its most basic form in 'Little Rockin' Chair' (fig. 3-31):

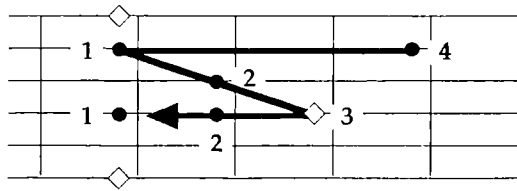


Fig. 3-31. V motive, 'Little Rockin' Chair'.

Many of the motives from period B are concluded with an appended cell that returns to the dominant note on the top E string via a #5th, 6th, root motion (fig. 3-32).

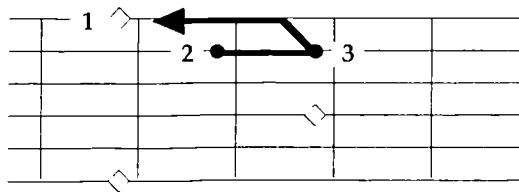


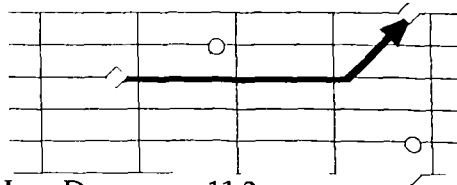
Fig. 3-32. V motive, consequent phrase.

Dominant motives of increasing length and complexity can be seen in volume two, fig. 43

3. 4. 3. The octave leap.

An octave leap on the dominant tone initially appeared as an isolated gesture within the context of a phrase but later the tones became a repeated figure. The gesture, which is achieved by movement between the first and fourth left hand fingers, occurs in both ascent and decent. The first occurrence in the transcriptions of an octave leap is in 'Mr. Johnson's Blues'. Repeated dominant octaves first appear in 'Move Over' at bar 7 as the 5th of the tonic chord. The device appears in the same bar of 'Blue Guitars', 'You Take Romance', 'Little Rockin' Chair', and 'I Can't Sleep Anymore'. The dominant octaves also appear against the dominant chord at bar 9 of 'Nothing But Trouble'. Ascending, descending and alternating forms are shown in the figs. 3-33, 3-34 and 3-35 respectively. The data presents the string set, the tones and the gestures used. The location and number of occurrences of the cells is shown beneath the figures.

Strings used: G/E
 Tones used: 5th
 Gesture used: R

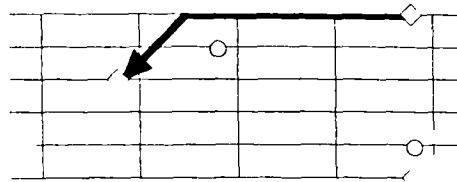


When You Feel Low Down.	11:2
Keep What You Got.	7:2
Love is the Answer.	2:2, 7:2
She's So Sweet.	8:4
Little Rockin' Chair.	7:1 (rpt 3x), 8:4, 9:4
Nothing But Trouble.	9:1 (rpt 4x), 10:3
I Can't Sleep Anymore.	6:4 (rpt 3x)

16 occurrences

Fig. 3-33. Octave leap, ascending form.

Strings used: G/E
 Tones used: 5th
 Gesture used: P

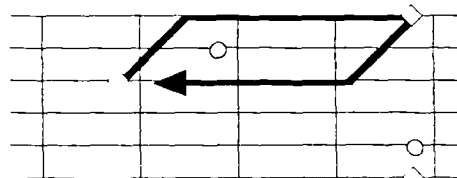


Mr. Johnson's Blues, chorus 4.	1:1
Blue Guitars, chorus 4	9:1
Move Over.	7:1 (rpt 3x)
Little Rockin' Chair.	7:4

5 occurrences

Fig. 3-34. Octave leap, descending form.

Strings used: G/E
 Tones used: 5th
 Gesture(s) used: P and R



Blue Guitars, chorus 1.	7:2
He's a Jelly Roll Baker	7:2
Love is the Answer.	6:4
You Take Romance.	6:4

Fig. 3-35. Octave leap, alternating form.

3. 4. 4. Repeated tones.

The 1927 solo 'I'm Not Rough' introduces extensive use of the repeated tone but the device becomes prevalent in the recordings of the 1950s.

In the analysis three or more consecutive repetitions of the same tone, all of which are principal tones, are presented in the following fig. 3 36:

Solo	Tone	Bar	Number of repeats
I'm Not Rough.	5th	1	11
	infl. 2nd	2	9
	root	3	9
	5th	4	7
	root	5	8
	infl. 2nd	10	12
When You Feel Low Down.	root	pick up	16
	infl. 2nd	2	15
	2nd	4	6
	infl. 2nd	4	4
You Take Romance.	root	pick up	16
Little Rockin' Chair	root	pick up	16
	infl. 2nd	3	17
Nothing But Trouble	infl. 2nd	pick up	14
<u>I Can't Sleep Anymore</u>	infl. 2nd	pick up	48

Fig. 3-36. Repeated tones.

The use of repeated tones occurs towards the beginning of the solo in all examples with the exception of the inflected 2nd at bar 10 of 'I'm Not Rough'. The function of the melodically static repeated tone, in Johnson's playing, is to set up a motor rhythm. The use of repeated tones is related to key; the three solos 'When You Feel Low Down', 'You Take Romance' and 'Little Rockin' Chair', all in the key of G, begin identically with the 16 repeated quaver triplets of the root note on the E string in the pick-up bar. All of these three solos are from period B.

Similarly the solos of 'Nothing But Trouble', and 'I Can't Sleep Anymore', both in the key of E, open with the inflected 2nd as a repeated tone. These recordings, only two years apart, are also from period B.

3. 4. 5. The riff.

Johnson, who could be perceived as a pioneer in bringing the riff into the blues guitar repertoire from his New Orleans origins, employs riffs consistently throughout his career from the earliest transcription to the most recent. They may be repeated strictly or with variation of either rhythm or pitch content.

In the transcribed output of Johnson under examination here, riffs are repeated from two times to nine times and contain from three to eight tones. The earliest riff occurs in his first recorded guitar solo of 1925 but riffs become more pervasive in the later period.

Three of the x^a motives, described at section 3. 2. 1. above (and in volume two fig. 39), are played as riff figures associated with the sub-dominant chord at bar 5 of the model. Riffs based on this motive occur throughout Johnson's career.

The three tone cell fig. 3-37 is more localised. It is not incorporated in the performer's repertoire under consideration here until 1949 but occurs regularly after that. It is executed with a 3 - 1 - 3 left hand toggle motion.

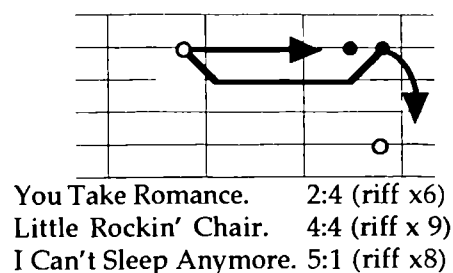


Fig. 3-37. Johnson riff.

There is a long riff, with variation, in 'Nothing But Trouble'. The tone series is performed four times in all, twice against the sub-dominant chord, A, then twice against the tonic chord, E. The opening tone is the #2nd degree of the sub-dominant chord; B#. Johnson responds to the change of chord by changing the first tone of the riff to a B \flat , the 5th of the tonic chord. A complete statement of the riff is a bar long. Thus the third statement of the riff is the altered version, which anticipates the arrival of the tonic chord at bar 7. This illustrates two features in Johnson's improvisatory technique:

- Complete mastery of the twelve bar model.
- The ability to alter a sequence of tones 'on the fly' to accommodate a specific musical requirement.

'He's a Jelly Roll Baker' and 'When You Feel Low Down' were both recorded at the same session and both contain extensive use of riffs.

3. 5. Larger cells.

By mapping progressions of consecutive tones it is possible to identify smaller motivic structures termed cells. These cells are designed to examine the

behaviour of tones in context, sub-divide and classify gestural activity derived from the melodic solos into smaller units and are supplementary to the inserted motivic responses which were examined above. It might be predicted (in accordance with volume two fig. 46-1) that if the performer began on the root note on the B string, there is a 31% probability that he will step down to the 6th on the G string (fig. 46-4), and, having sounded this tone, there is then a 71% probability that he will return back to the root note. A three tone cell is the result.

The cells, derived from the prevalent movement patterns shown in volume two fig. 47, are labelled A, B, C, D, L, and Q because they contain that corresponding gesture. One further category is labelled O for other gestures.

There are two examples where the performer does begin his improvisation on the root note on the B string. These are 'Blue Guitars', chorus 4, and 'Keep What You Got'. In the former the performer chooses to commence with the gesture from the root note executed with the first finger by stepping up to the 2nd degree on the same string, executed with the 3rd finger, and inflecting the string to produce a neutral third; a gesture that occurs for 10% of the total output. On volume two fig. 46-3 it can be seen that there are 6 destination tones recorded from the inflected 2nd on the B string and, at the opening of 'Blue Guitars' chorus 4, Johnson elects to use the most common pathway and returns to the root note. (A gesture that occurs 57% of the total output).

The opening gesture of 'Keep What You Got' is a glissando that is achieved by placing the third finger on the fretboard at the position of the 2nd on the B string, and sliding up two frets to the third on the B string. This gesture, as can be seen on volume two fig. 46-1, occurs for 11% of the total output. The destination tones from the 3rd on the B string are shown on volume two fig. 46-7 and in this example Johnson follows the most common pathway of stepping onto the 5th on the E string with the first finger, a gesture that occurs for 68% of the total output.

It was found that the analytical process is facilitated by defining small units as cells. It can be useful to consider that cells are linked to form larger motivic structures. In looking for longer motivic structures the analyst is often frustrated by changes in direction or alterations of one or two tones within the body of a motive. As Owens also observed in his analysis of Parker: "The mix of familiar motives is always different and some phrases, or portions of phrases, are always unfamiliar" (1974a: 35).

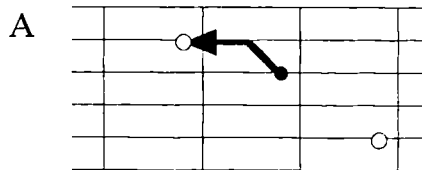
It was found that for analytical purposes cells containing three tones were, in the main, ideal, although on the diagrams cells from two tones to eight tones are also

presented. Three tone cells are frequently composed from two of the gestures shown on charts volume two fig. 47.

3. 5. 1. A cells.

The four cells, labelled A, contain the most frequent gesture: the 6th on the G string to the root on the B string (fig. 47-1, gesture A). Cells A1 to A3 are all played relative to the C chord form in contrast to cell A4 which bridges A and C chord forms. The cell A, fig. 3-38, is a two tone gesture executed with a left hand two to one motion that is occasionally used at the opening of a larger phrase.

Strings used: G/B
 Tones used: Root - 6th
 Gestures used: A



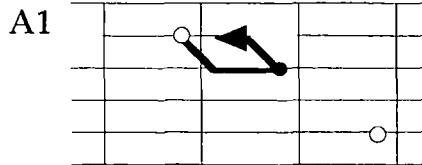
Mr. Johnson's Blues, chorus 4.	7:4
Have to change Keys, chorus 2.	9:4
Blue Guitars, chorus 2.	9:4
He's a Jelly Roll Baker.	10:1

4 occurrences

Fig. 3-38. Gesture A.

The cell A1 (fig. 3-39) is a circular movement pattern which comprises two gestures from volume two fig. 47, (gestures A and C). The movement comprises a step down from the root note to the 2nd degree followed by a return to the root note in a left hand 1 - 2 - 1 gesture. This is the most frequently used three tone cell occurring 43 times throughout the transcriptions.

Strings used: G/B
 Tones used: Root - 6th
 Gesture(s) used: C and A



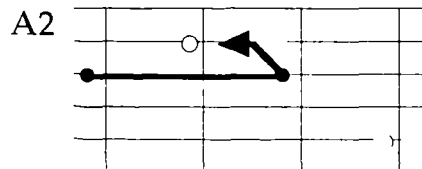
Mr. Johnson's Blues, chorus 2.	2:4, 6:4, 8:3
Mr. Johnson's Blues, chorus 4.	11:4
I'm Not Rough.	2:1, 5:1, 6:1, 7:1, 8:2, 11:4
Move Over.	3:1, 6:3
Have to Change Keys, chorus 1.	7:4, 11:4
Have to Change Keys, chorus 2.	6:2, 6:4, 10:3, 11:4
Have to Change Keys, chorus 3.	2:4, 6:4
Have to Change Keys, chorus 5.	5:1, 6:3
Misty Morning.	3:4, 6:3, 10:4
Blue Guitars, chorus 1.	6:4, 10:2, 11:4
Blue Guitars, chorus 4.	2:3, 5:2, 6:4 (x2), 7:3, 10:4, 11:4
Lazy Woman Blues.	3:4, 6:4, 11:3
He's a Jelly Roll Baker	10:2
When You Feel Low Down.	10:2
Love is the Answer.	2:4, 7:4, 11:3
She's So Sweet.	10:2

44 occurrences

Fig. 3-39. Cell A1.

Cell A2 (fig. 3-40) is a three tone gesture that steps up to the root from the 5th via the 6th on the G string which combines gestures K and A from volume two fig. 47. The move is accomplished by a 1 - 2 - 1 fingering pattern.

Strings used: G/B
 Tones used: 5th - 6th - Root
 Gestures used: K and A



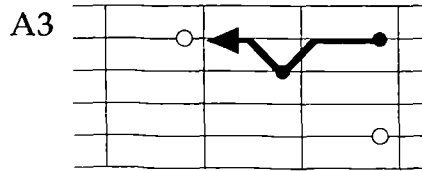
Mr. Johnson's Blues, chorus 2.	9:4
Mr. Johnson's Blues, chorus 4.	1:2, 9:4
Move Over.	7:4
Have to Change Keys, chorus 1.	2:3, 7:2, 8:3, 9:3
Have to Change Keys, chorus 2.	7:3, 10:2
Misty Morning.	3:3, 4:4, 7:3, 11:4
Blue Guitars, chorus 4.	3:4
Lazy Woman Blues	2:1, 7:2, 11:1
He's a Jelly Roll Baker.	7:3, 8:2, 11:2
When You Feel Low Down.	9:3
Keep What You Got.	8:1, 9:3, 10:2
Love is the Answer.	p.u.
You Take Romance.	7:4, 10:1, 10:3
She's So Sweet.	2:4, 6:4, 7:2, 7:4, 9:4, 11:2
Little Rockin' Chair.	2:4, 8:2, 10:2
Nothing But Trouble.	p.u., 3:3, 6:3, 7:3
I Can't Sleep Anymore.	p.u., 8:1, 10:3, 11:2

46 occurrences

Fig. 3-40. Cell A2.

Cell A3 (fig. 3-41), combining gestures W and A, descends from the 2nd degree to the root note via the 6th degree and is accomplished by a 3 - 2 - 1 fingering pattern. It occurs thirteen times throughout the transcriptions

Strings used: G - B
 Tones used: Root - 2nd - 6th
 Gestures used: W and A



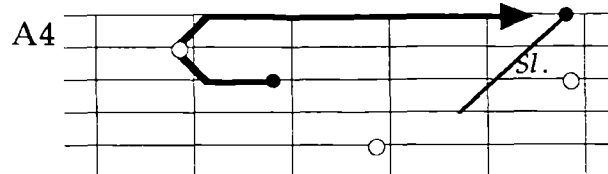
I'm Not Rough.	4:4
Have to Change Keys, chorus	3.4:4, 10:3
Blue Guitars, chorus 1.	10:4
Blue Guitars, chorus 2.	10:4
Lazy Woman Blues.	8:2
When You Feel Low Down.	5:2
Love is the Answer.	10:3
Nothing But Trouble.	5:1, 6:1, 7:1, 8:1, 11:3

13 occurrences

Fig. 3-41. Cell A3.

Cell A4 (Fig. 3-42) combines gesture A with a glissando on the E string, bridging C and A chord forms, which is executed by placing the third finger on the 5th on the E string and sliding up two frets. The cell, made by a left hand 2 - 1 - 3 fingering sequence on consecutive strings, is comparable to the more common cell D1 in which the slide is made on the B string.

Strings used: G - B - E
 Tones used: 6th - Root - 6th
 Gestures used: A



Lazy Woman Blues.	6:2
Have to Change Keys., chorus 5.	5:4

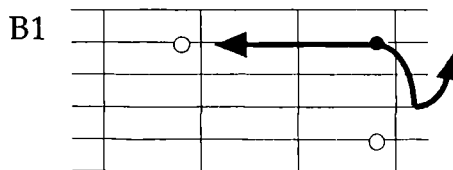
Fig. 3-42. Cell A4.

3. 5. 2. B cells.

There are ten cells which feature the second most frequent gesture B: the 2nd - root descent on the B string.

Cell B1, (fig. 3-43) a linear pattern that comprises a \flat 3rd - 2nd - root descent on the B string, combines gestures J and B. It is accomplished by a 3 - 3 - 1 left hand movement and occurs thirty seven times throughout the transcriptions.

String used: B
Tones used: Root - 2nd
Gestures used: J and B



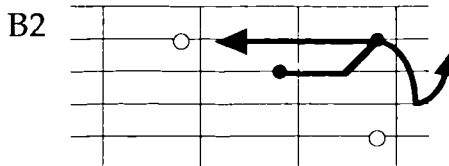
Mr. Johnson's Blues, chorus 2.	2:2, 6:3, 11:3
Mr. Johnson's Blues, chorus 4.	10:4, 11:3
I'm Not Rough.	2:2, 10:1, 11:4
Have to Change Keys, chorus 1.	3:4, 6:4, 9:4, 10:4
Have to Change Keys, chorus 2.	10:3, 11:3
Have to Change Keys, chorus 3.	1:3, 2:3, 7:4, 9:4, 10:2, 11:4
Have to Change Keys, chorus 5.	2:2, 3:4, 6:3, 10:2
Misty Morning.	10:2
Blue Guitars, chorus 4.	6:1
Lazy Woman Blues.	11:2
When You Feel Low Down.	6:1, 10:1, 11:3
Love is the Answer.	1:1, 2:3, 6:2
You Take Romance.	6:3, 10:2
She's So Sweet.	11:3
Nothing But Trouble.	2:3,

37 occurrences

Fig. 3-43. Cell B1.

B2 (fig. 3-44) is the same as cell B2 but preceded by a step up from the 6th on the G string.

Strings used: G/B
Tones used: Root - 2nd - 6th
Gestures used: J and B



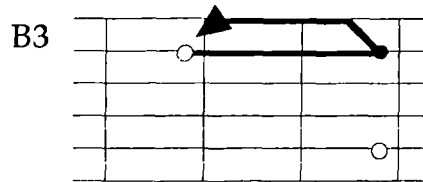
Move Over.	5:2, 5:4
Have to Change Keys, chorus 2.	5:4
Have to Change Keys, chorus 3.	5:3, 6:2
Blue Guitars, chorus 4.	2:3, 6:2, 10:2

8 occurrences

Fig. 3-44. Cell B2.

In cell B3 (fig. 3-45), a circular form, the gesture B is preceded by the gesture G. The cell, a step up from and return back to the root note via the 2nd on the B string, is achieved by a 1 - 3 - 1 toggle motion.

String used: B
 Tones used: Root - 2nd
 Gestures used: G and B



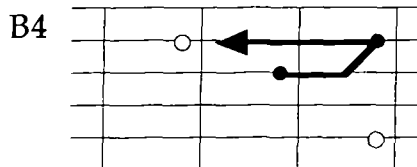
Move Over.	10:4
Have to Change Keys, chorus 1.	2:2, 10:4
Have to Change Keys, chorus 2.	10:4
Have to Change Keys, chorus 5.	5:2, 12:2
Misty Morning.	1:3, 5:3
Blue Guitars, chorus 1.	10:2, 10:3
Blue Guitars, chorus 2.	10:2, 10:3
Blue Guitars, chorus 4.	5:2
He's a Jelly Roll Baker.	5:2, 6:4, 10:4, 11:3
When You Feel Low Down.	5:2, 5:3, 6:4, 10:4
Keep What You Got.	10:4
Love is the Answer.	7:1, 10:3, 11:4
You Take Romance.	10:3, 10:4
She's So Sweet.	10:4, 11:4
Little Rockin' Chair.	7:4, 10:4
Nothing But Trouble.	2:4, 10:4
I Can't Sleep Anymore.	10:4

34 occurrences

Fig. 3-45. Cell B3.

Cell B4 (fig. 3-46) features the same 2 - 3 - 1 left hand finger movement as cell B2 but omits the inflection of the 2nd degree.

Strings used: G - B
 Tones used: Root - 2nd - 6th
 Gesture used: B



Move Over.	1:2, 2:4
Have to Change Keys, chorus 5.	2:3, 5:1
Misty Morning.	2:3, 5:4, 6:2, 10:3
Blue Guitars, chorus 4.	10:1
He's a Jelly Roll Baker.	6:4
When You Feel Low Down.	6:2, 6:3, 11:4
Keep What You Got.	11:4

14 occurrences

Fig. 3-46. Cell B4.

Cell B5 (fig. 3-47) comprises the 2nd, root note and 6th degrees in a descending sequence. The pathway through identical three tone groupings, seen in cells A3, B4 and C3, is varied by the left hand fingering sequence, which occur as follows:

Cell A3	3 - 2 - 1
Cell B4	2 - 3 - 1
Cell B5	3 - 1 - 2
Cell C3	1 - 2 - 3

Strings used: G/B
 Tones used: Root - 2nd - 6th
 Gestures used: B and C

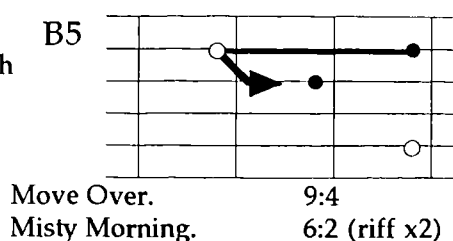


Fig. 3-47. Cell B5.

Cell B6 (fig. 3-48), unique in the recorded transcriptions, is from the last transcription, the 1952 recording 'I Can't Sleep Anymore' and perhaps shows the performer exploring a novel tone pathway.

Strings used: G - B
 Tones used: Root - 2nd - 6th
 Gesture used: B

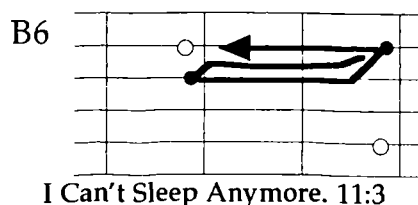


Fig. 3-48. Cell B6.

Cell B7 (fig. 3-49) is a gesture that Johnson frequently uses to bridge A and C chord forms. Located in the A position Johnson placed his index finger on the 5th degree on the E string. The third finger naturally falls two frets higher on the B string but after articulating that string the performer immediately makes a glissando down two frets to the 2nd on the B string and then returns to the root note. The cell is accomplished by a 1-3-1 left hand sequence.

Strings used: B - E
 Tones used: Root - 2nd - 5th
 Gesture used: B

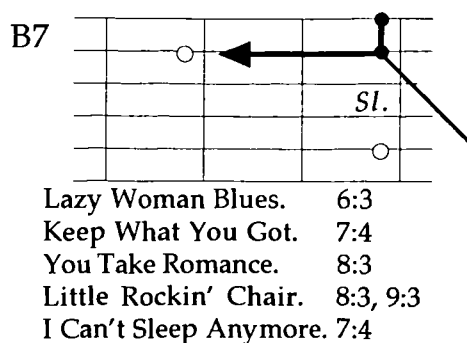


Fig. 3-49. Cell B7.

Cells B8, B9 and B10 are linear patterns that descend to the root note on the B string. B8 (fig. 3-50) features a 4 - 3 - 1 left hand finger motion and descends to the root note from the flattened third via the second degree.

String used: B
 Tones used: #2nd - 3rd - Root
 Gesture used: B

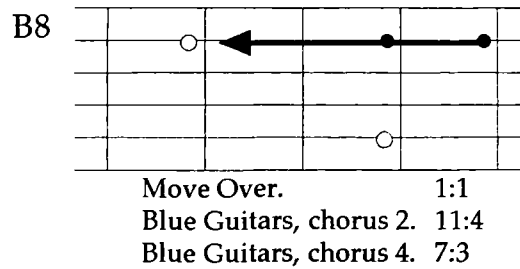


Fig. 3-50. Cell B8.

Cell B9 (fig. 3-51), similar in appearance to B8, has a different fingering structure and function. Here the motion is used to shift between A and C chord forms. A left hand 3 - 2 - 1 chromatic descent on the B string is made in the A chord form position then the index finger descends two frets to the root note.

String used: B
 Tones used: 2nd - #2nd - 3rd - Root
 Gesture used: B

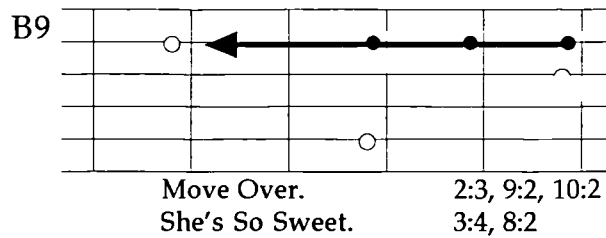


Fig. 3-51. Cell B9.

Cell B10 (fig. 3-52) comprises the same four note grouping in a different sequence. The first three notes in the A chord form position are executed with a left hand 2 - 3 - 1 motion, followed by the descent back to the root note.

String used: B
 Tones used: 2nd - #2nd - 3rd - Root
 Gestures used: Q and B

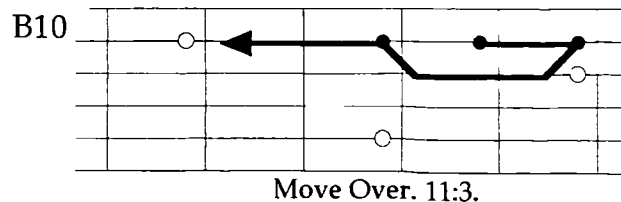
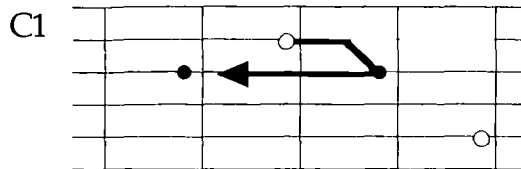


Fig. 3-52. Cell B10.

3.5.3. C cells.

The cells on that incorporate gesture C, a root to 6th degree descent between the B and G strings, are less frequently used. The most common, C1 (fig. 3-53) an inversion of the much more common cell A2, comprises a 1 - 2 - 1 fingering pattern.

Strings used: G/B
Tones used: Root - 5th - 6th
Gesture used: C



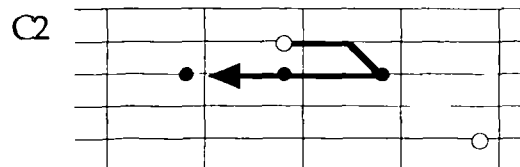
Have to Change Keys, chorus 1.2:2
He's a Jelly Roll Baker. 7:1
Keep What You Got. 7:2, 7:4
Love is the Answer. 2:1, 6:3, 7:1
Nothing But Trouble. 10:2

8 occurrences

Fig. 3-53. Cell C1.

Cell C2 (fig. 3-54), a similar pattern to C1, incorporates a chromatic descent. Although appearing alike, the performer must have planned ahead while executing C2, because the descent from root to 6th is normally accomplished by a 1 - 2 gesture (as in C1 above). In order to make the chromatic descent the performer probably made this gesture with a 1 - 3 fingering pattern, allowing him to continue the chromatic descent with fingers 2 - 1.

Strings used: G/B
Tones used: Root - 5th - #5th - 6th
Gesture used: C



You Take Romance. 6:4
She's So Sweet. 8:3
I Can't Sleep Anymore. 7:4

Fig. 3-54. Cell C2.

Cells C3, C4 and C5 all comprise a 1 - 2 - 3 left hand fingering pattern. In its basic form at C3 (fig. 3-55) the tones produced are the root, 6th and 2nd.

Strings used: G/B
 Tones used: Root - 2nd - 6th
 Gesture used: C

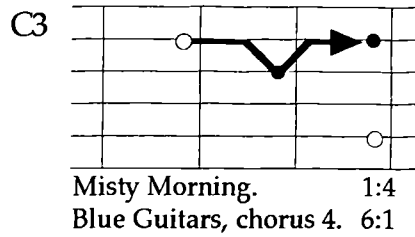


Fig. 3-55. Cell C3.

Cell C4 (fig. 3-56), a duplicate of cell C3, but after placing the finger on the 2nd degree Johnson immediately slides up two frets with the third finger to the A chord form position.

Strings used: G - B
 Tones used: Root - 6th - 3rd
 Gesture used: C

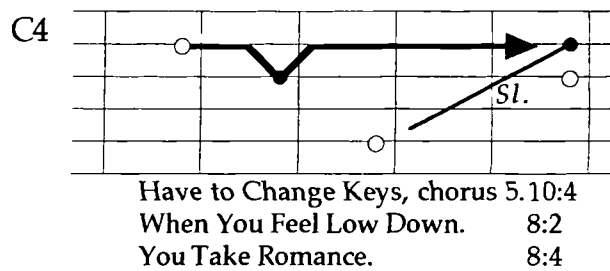


Fig. 3-56. Cell C4.

Cell C5 (fig. 3-57) duplicates the left hand finger sequence of C4 but here the performer places his third finger on to the E string and makes the glissando up to the 6th degree. Although the final tones of each of the cells C4 and C5 are different, the 3rd and 6th respectively, it can be seen on the graphic notation that the two cells have been instigated by the same left hand motion.

Strings used: G - B - E
 Tones used: 6th - Root - 6th
 Gesture used: C

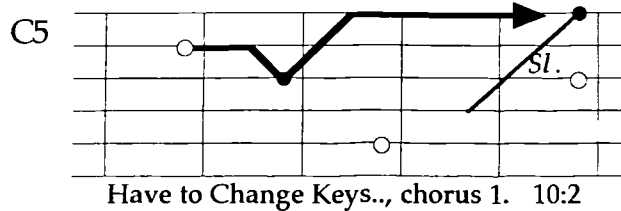


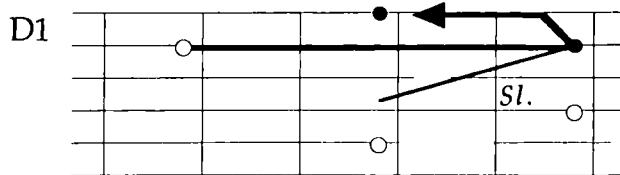
Fig. 3-57. Cell C5.

3.5.4. D cells.

Cells that contain gesture D feature a movement from the 3rd on the B string to the 5th on the E string.

The left hand fingers 1 and 3 lie conveniently over a two fret span and this is a pattern that Johnson frequently exploits in his cells. D1 (fig 3-58) is a characteristic phrase of Johnson's style. This cell occurs thirty seven times in eighteen out of the twenty two choruses covering the entire period of the transcribed output. This gesture, used by the performer to bridge C shape and A chord forms, is accomplished by Johnson placing the 3rd finger on the 2nd degree on the B string and sliding up two frets to the 3rd degree. This is followed by a step up onto the 5th on the E string with the first finger.

Strings used: B/E
 Tones used: Root - 3rd - 5th
 Gestures used: M and D



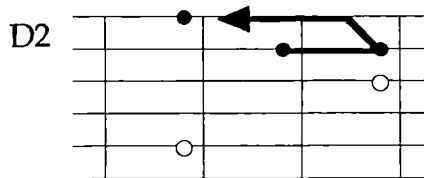
Mr. Johnsons Blues, chorus 2.	8:3, 10:2, 10:4
Mr. Johnson's Blues, chorus 4.	8:1, 11:1
Have to Change Keys., chorus 1.	3:1, 11:1
Have to Change Keys., chorus 2.	4:2, 6:2, 7:3, 9:4
Have to Change Keys., chorus 3.	9:4
Have to Change Keys., chorus 5.	2:4, 3:2
Blue Guitars, chorus 1.	7:4 10:4
Blue Guitars, chorus 2.	11:1
Blue Guitars, chorus 4.	10:4
Lazy Woman Blues.	4:1, 7:2, 8:3
He's a Jelly Roll Baker.	8:2
When You Feel Low Down.	7:1, 10:2
Keep What You Got	8:1
Love is the Answer.	3:2, 8:2, 11:1
She's So Sweet.	2:4, 6:4, 7:2, 7:4
Little Rockin' Chair.	8:2
Nothing But Trouble.	4:1, 8:3, 11:1
I Can't Sleep Anymore.	8:2

37 occurrences

Fig. 3-58. Cell D1.

Cell D2 (fig. 3-59) is an A chord form that features a chromatic move on the B string, from the #2nd to the 3rd degree, before stepping up to the 5th on the E string, is executed with a left hand 2 - 3 movement .

Strings used: B/E
 Tones used: #2nd - 3rd - 5th
 Gestures used: Q and D



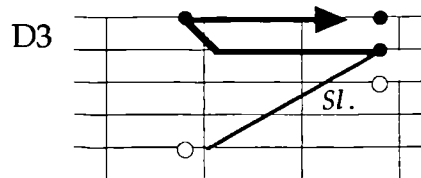
Mr. Johnson's Blues, chorus 4.	8:3.
I'm Not Rough	6:3, 7:2, 8:3, 11:2
Move Over.	8:3
Have to Change Keys, chorus 5.	8:2
Blue Guitars, chorus 1	8:4.
Blue Guitars, chorus 2.	8:4
Blue Guitars, chorus 4.	3:4, 7:2, 8:4
Lazy Woman Blues.	10:4
Love is the Answer.	9:2
You Take Romance	9:3
She's So Sweet.	3:3, 9:3
I Can't Sleep Anymore	9:3, 10:1

19 occurrences

Fig. 3-59. Cell D2.

Cells D3 and D4, where Johnson employs the same third finger slide up to the 3rd of the chord as was seen in cell D1, is composed by linking two common gestures; D and F. The cell is executed with a 3 - 1 - 3 left hand strategy. The two tones fretted by the third finger are two frets above the first finger position. As can be seen from fig. 3-60 the cell frequently occurs in repeated riff formations.

Strings used: B/E
 Tones used: 3rd - 5th - 6th
 Gestures used: D and F



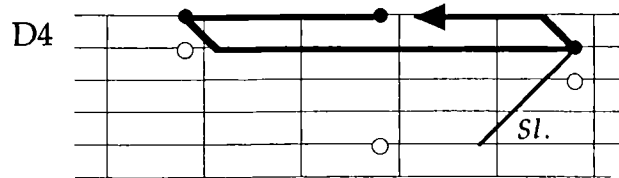
Mr Johnson's Blues, chorus 2	10:4
Mr Johnson's Blues, chorus 4	11:2
Have to Change Keys, chorus 2.	9:4
Have to Change Keys, chorus 5.	3:1
Blue Guitars, chorus 4.	7:2
Lazy Woman Blues.	3:1 (riff x3), 4:3
He's a Jelly Roll Baker.	1:3, 2:3, 3:3, 9:2
When You Feel Lowdown.	2:2 (riff x2), 7:2 (riff x4), 8:3 (riff x2), 10:3
Keep What You Got.	8:2 (riff x5)
Love is the Answer.	4:2 (riff x2), 8:3 (riff x2), 11:2
You Take Romance.	2:2 (riff x2), 8:2
She's So Sweet.	3:1
Nothing But Trouble.	8:4, 11:2
I Can't Sleep Anymore.	8:3

16 occurrences

Fig. 3-60. Cell D3.

D4 (fig. 3-61) is a circular pattern that opens with the third finger on the 5th degree on the E string. Johnson then steps down two frets to the 4th on the E string, fretted by the first finger, then places his third finger back on the B string two frets above the first finger before immediately sliding back up to the 3rd. The final tone of the cell is thus the same as the first but this time fretted by the first finger.

Strings used: B - E
 Tones used: 5th - 4th - 3rd
 Gesture used: D

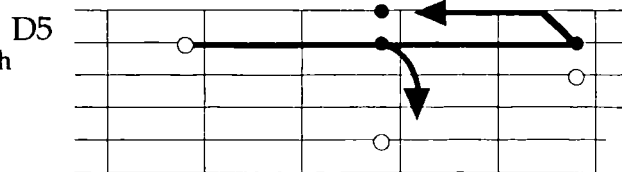


Keep What You Got. 7:3
 Little Rockin' Chair. 7:3, 9:4
 I Can't Sleep Anymore. 7:3

Fig. 3-61. Cell D4.

D5 (fig. 3-62) is a cell that is related to D1 but incorporates an extra tone: the inflected second on the B string. This tone is executed with the third finger, then the same finger is used to implement the slide up to the A position.

Strings used: B/E
 Tones used: Root - 2nd - 3rd - 5th
 Gestures used: O and D

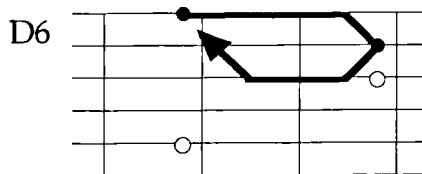


Mr. Johnson's Blues, chorus 4. 10:3
 Have to Change Keys..., chorus 1. 8:4

Fig. 3-62. Cell D5.

Cell D6 (fig. 3-63), a circular form, features a step down from and return to the 5th on the E string via the 3rd on the B string by combining gestures L and D in a left hand 1 - 3 - 1 toggle motion.

Strings used: B - E
 Tones used: 5th - 3rd
 Gestures used: D and L



Lazy Woman Blues.	4:3, 8:4
Little Rockin' Chair.	2:2
He's a Jelly Roll Baker.	9:4
When You Feel Lowdown.	9:1
Love is the Answer.	3:4

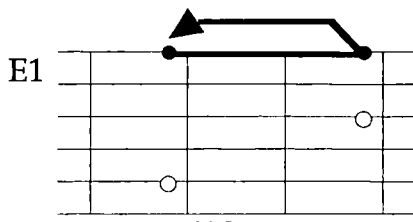
Fig. 3-63. Cell D6.

3. 5. 5. E cells.

Cells of the E group, all occupying the A chord position, incorporate the gesture E - a 6th to 5th descent on the E string.

The simplest cell, E1 (fig. 3-64), is a circular pattern that moves a step up to the 6th and returns to the 5th. It is executed with a 1 - 3 - 1 toggle fingering pattern. This cell combines gestures F and E.

String used: E
 Tones used: 5th - 6th
 Gestures used: F and E



Mr. Johnsons Blues.	11:2
Mr. Johnsons Blues, chorus 4.	8:2
I'm Not Rough.	4:1, 9:4, 11:3
Have to Change Keys., chorus 1.	1:3, 3:3, 11:3
Have to Change Keys., chorus 2.	4:2, 6:3, 7:4
Have to Change Keys., chorus 3.	10:1
Have to Change Keys., chorus 5.	3:3, 6:1, 8:3
Blue Guitars, chorus 2.	8:4
Lazy Woman Blues.	8:4
He's a Jelly Roll Baker.	4:1, 9:3
Love is the Answer.	9:4
You Take Romance.	8:2, 9:4
She's So Sweet.	8:1
I Can't Sleep Anymore.	10:2

24 occurrences

Fig. 3-64. Cell E1.

Cells E2 (fig. 3-65) and E3 contain the same basic movement with a chromatic passing note in the ascending pattern. E2 is executed with a 1 - 2 - 3 - 1 left hand finger motion.

String used: E
 Tones used: 5th - #5th - 6th
 Gesture used: E

E2

I'm Not Rough. 7:4, 8:4
 Move Over. 8:4
 Have to Change Keys., chorus 3. 9:3

Fig. 3-65. Cell E2.

E3 (fig. 3-66) is a more convoluted six tone cell.

String used: E
 Tones used: 5th - #5th - 6th
 Gesture used: E

E3

Have to Change Keys., chorus 1. 7:3

Fig. 3-66. Cell E3.

Cell E4 (fig. 3-67) opens with an inflected tone, the 6th degree, produced with the left hand third finger. The inflection produces a blue note, the flattened 7th. Johnson then steps down with the left hand first finger two frets lower on to the 5th degree. The cell is concluded with gesture F, a step back up to the 6th degree, but without the string inflection. The cell occurs as a riff.

String used: E
 Tones used: 5th - 6th - inflected 6th
 Gestures used: E

E4

Have To Change Keys., chorus 5. 9:1 (riff x4)

Fig. 3-67. Cell E4.

E5 (fig. 3-68), a cell unique to the 'Blue Guitars' solo, is a cyclic motion that is accomplished by the left hand finger sequence 1 - 2 - 3 - 1, producing the tones 5th,

#2nd, 6th, 5th. The cell occurs at the same location (bar 11, beat 3) in two different choruses of the solo. There are two implications:

- A performer may explore a cell over a short time period and then discard it.
- Specific cells, even though they may not have a strong harmonic implication, may be played at particular locations within the model.

Strings used: B - E
 Tones used: #2nd - 5th - 6th
 Gesture used: E

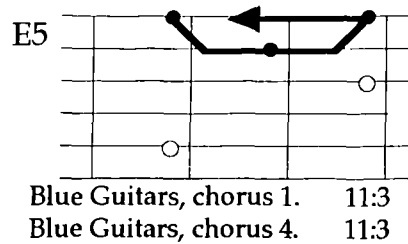


Fig. 3-68. Cell E5.

Cell E6 (fig. 3-69), an inversion of E1, is accomplished by a 3 - 1 - 3 toggle action.

Strings used: E
 Tones used: 5th - 6th
 Gestures used: F and E

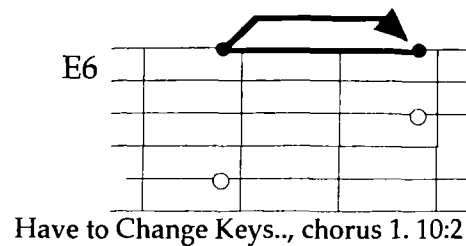


Fig. 3-69. Cell E6.

The same 3 - 1 - 3 fingering is used on cell E7 (fig. 3-70) but here, by a change of string, the performer descends to the 3rd on the B string.

Strings used: B - E
 Tones used: 5th - 4th - 3rd
 Gestures used: E and L

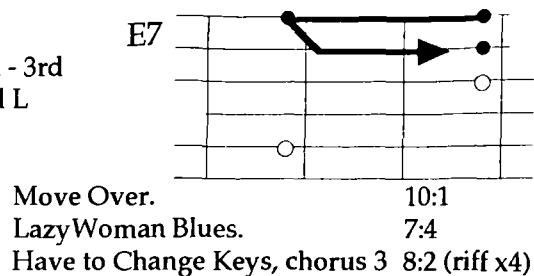
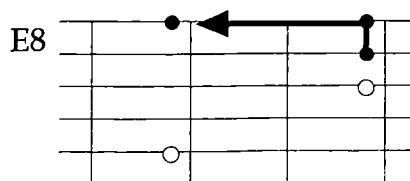


Fig. 3-70. Cell E7.

Cell E8 (fig. 3-71) is a complex left hand movement strategy whereby the third finger immediately crosses from the B string to the adjacent E string in 3 - 3 - 1 motion.

Strings used: B - E
 Tones used: 3rd - 5th - 6th
 Gestures used: E

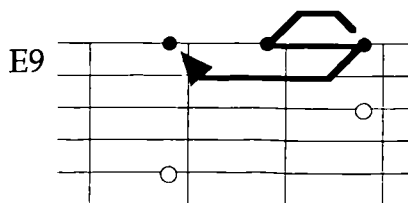


Move Over.	2:1
Have to Change Keys., chorus 5.	10:1
Blue Guitars, chorus 4.	4:2
Keep What You Got.	6:4

Fig. 3-71. Cell E8.

Cell E9 (fig. 3-72) is a truncated version of cell E3. The two cells, taken from recording dates eight months apart, do not occur elsewhere in the transcriptions.

String used: E
 Tones used: 5th - 6th - b6th
 Gesture used: E



Mr. Johnson's Blues. 4:3, 5:4

Fig. 3-72. Cell E9.

Cell E10 (fig. 3-73), which occurs 16 times in the transcriptions, is a linear descent on the E string from the b7th degree to the 5th, via the 6th.

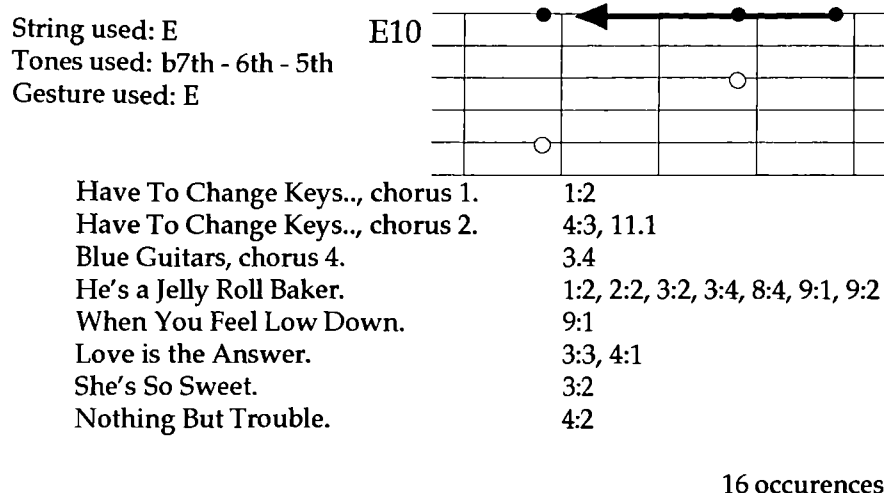


Fig. 3-73. Cell E10.

From the 1942 recording of 'He's a Jelly Roll Baker' onwards the $\flat 7^{\text{th}}$ on the E string is associated with two features:

- A descending cell E10 against the tonic chord: which comprises the tones $\flat 7^{\text{th}}$ - 6^{th} - 5^{th} , produced by a 4 - 3 - 1 left hand fingering, the first two tones having a duration of a semi-quaver. The cell is articulated by striking the string to produce the $\flat 7^{\text{th}}$ then rapidly executing a pull-off (described below) to produce the 6^{th} degree. The pair of semi-quavers occur on either the first or third quaver of a swung triplet grouping.
- This same descending cell is also used against the dominant chord (when it occurs in bar 9 of the model) against which it forms the $\flat 3^{\text{rd}}$ - 2^{nd} - root.

3. 5. 6. L cells.

Five cells employ the gesture L a descent from the 5^{th} degree to the 3^{rd} degree executed with a 1 - 3 left hand motion. With one exception these cells occupy the A chord position. Cells L1, L2 and L3 all comprise the same movement pattern; a descent from the 5^{th} to the 2^{nd} via the 3^{rd} . L3 (fig. 3-76) shows the most basic form. In L2 (fig. 3-75) the final tone of the cell is inflected and in L1 (fig. 3-74) the final tone is inflected and then released.

Strings used: B - E
 Tones used: 5th - 3rd - 2nd
 Gestures used: L and J

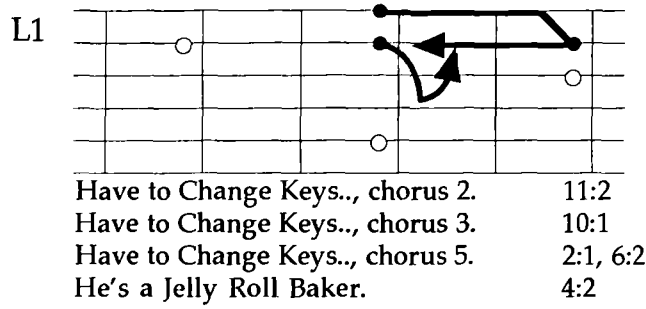


Fig. 3-74. Cell L1.

Strings used: B - E
 Tones used: 5th - 3rd - 2nd
 Gesture used: L

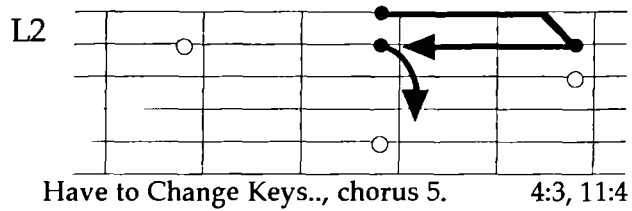


Fig. 3-75. Cell L2.

Strings used: B - E
 Tones used: 5th - 3rd - 2nd
 Gesture used: L

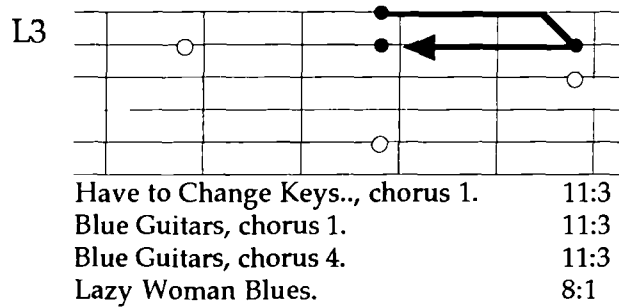


Fig. 3-76. Cell L3.

Cell L4 (fig. 3-77) is an inversion of cell D1, a 5th - 3rd - root descent, which transverses the A and C chord form areas.

Strings used: B - E
 Tones used: 5th - 3rd - Root
 Gesture used: L

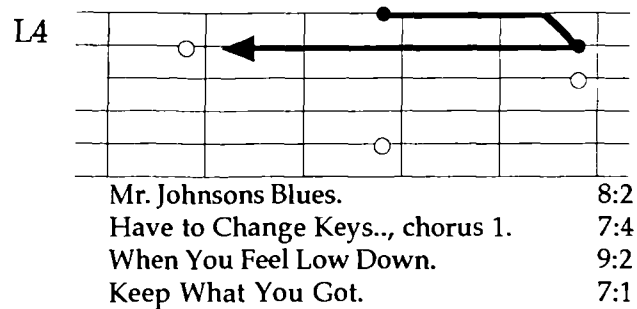


Fig. 3-77. Cell L4.

Cell L5, a complex gesture executed with a 1 - 3 - 2 - 3 left hand action, occurs in the 1929 Blue Guitars solo and is not taken up elsewhere in the transcriptions.

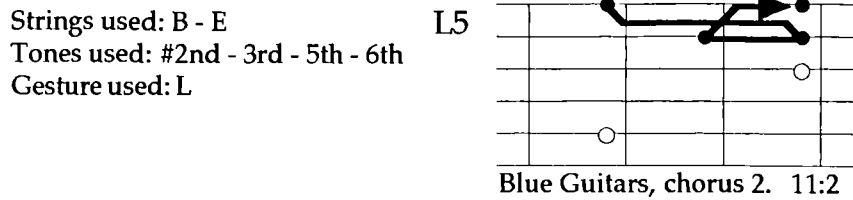


Fig. 3-78. Cell L5.

3.5.7. Q cells.

The cells that contain gesture Q, a #2nd - 3rd motion on the B string, are shown below. Q1 - 3 (figs. 3-79, 3-80 and 3-81) are contained within the A chord form position. Q1 and 2 ascend up to the 6th degree on the E string, and Q3 descends to the third on the B string.

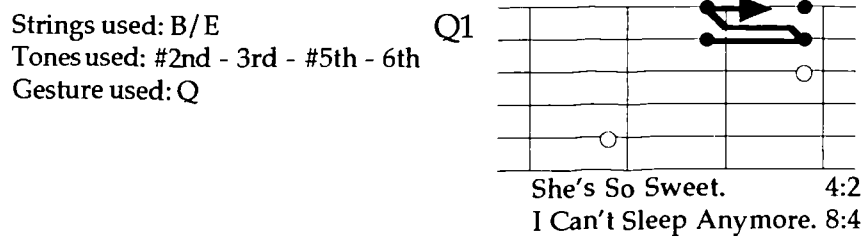


Fig. 3-79. Cell Q1.

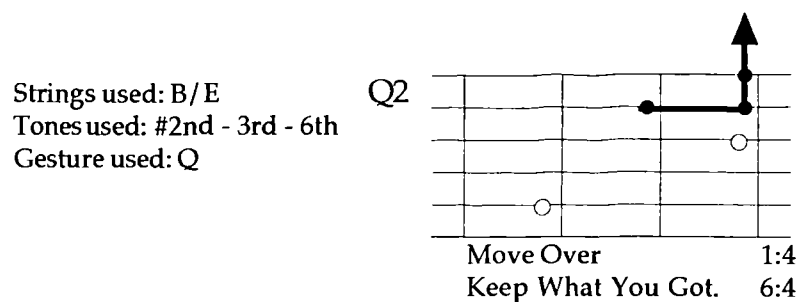
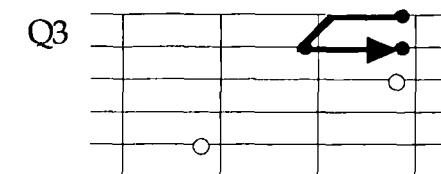


Fig. 3-80. Cell Q2.

Strings used: B/E
 Tones used: 6th - #2nd - 3rd
 Gesture used: Q

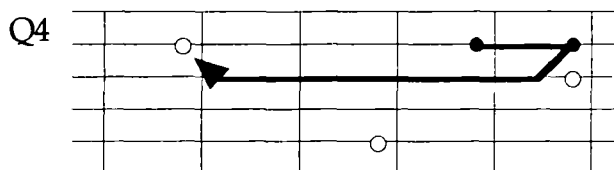


Have to Change Keys, chorus 1. 9:2

Fig. 3-81. Cell Q3.

The more commonly used cells that incorporate this gesture bridge A and C chord form positions: cells Q4 and Q5. Q4 (fig. 3-82) descends to the root note.

Strings used: B
 Tones used: #2nd - 3rd - Root
 Gesture used: Q

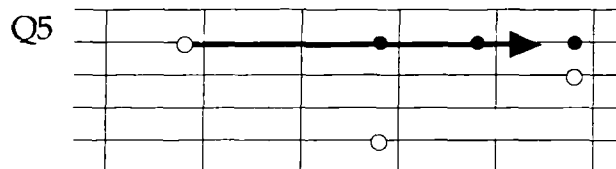


Mr. Johnson's Blues. 3:4
 Have to Change Keys, chorus 2. 6:4
 I'm Not Rough. 1:4, 7:1, 8:1.

Fig. 3-82. Cell Q4.

Cell Q5 (fig. 3-83) is a linear form that ascends from the root note to the third degree incorporating chromatic movement.

String used: B
 Tones used: Root - 2nd - #2nd - 3rd
 Gestures used: G and Q



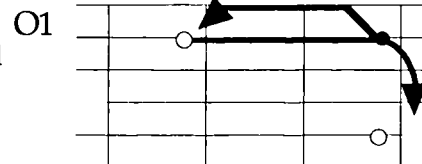
Move Over 1:4, 8:2
 Blue Guitars, chorus 4. 3:3

Fig. 3-83. Cell Q5.

3.5.8. O cells.

The following cells, labelled O for other cells, are infrequently used with the exception of O1 (fig. 3-84) which occurs twenty-four times. The cell is constructed with a 1 - 3 - 1 left hand motion with the second tone being inflected. The cell is the same as that labelled B3 except for the addition of the inflected tone.

String used: B
Tones used: Root - inflected 2nd
Gesture used: O



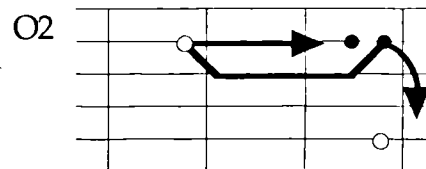
Mr. Johnson's Blues, chorus 2.	5:2, 10:1
I'm Not Rough.	5:4
Have to Change Keys, chorus 1.	1:4, 2:4
Misty Morning.	5:1
Blue Guitars, chorus 1.	5:2, 6:2
Blue Guitars, chorus 2.	9:4
Blue Guitars, chorus 4.	1:1
He's a Jelly Roll Baker.	10:1
Keep What You Got.	10:2, 11:3
Love is the Answer.	p.u., 7:3
You Take Romance.	7:4
She's So Sweet.	9:4, 10:2
Little Rockin' Chair.	4:3, 10:2
Nothing But Trouble.	3:3, 4:4
I Can't Sleep Anymore.	p.u., 10:3

24 occurrences

Fig. 3-84. Cell O1.

Cell O2 (fig. 3-85) is formed from a 3 - 1 - 3 left hand toggle motion. It occurs in repeated riff formations and has an identical left hand motion as cell E4, but here the cell is placed on the B string in contrast to the E string of E4.

String used: B
Tones used: Root - 2nd - inflected 2nd
Gestures used: O

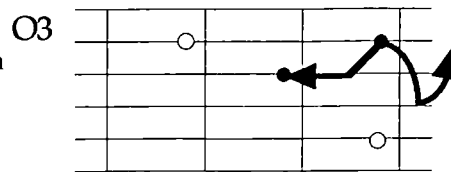


You Take Romance.	2:4 (riff x6)
Little Rockin' Chair.	4:4 (riff x 9)
I Can't Sleep Anymore.	5:1 (riff x8)

Fig. 3-85. Cell O2.

The cell O3 (fig. 3-86) is an inflection and release of the 2nd degree on the B string, followed by a step down to the 6th degree on the G string which is executed with a 3 - 2 fingering strategy.

Strings used: G / B
 Tones used: Inflected 2nd - 2nd 6th
 Gestures used:

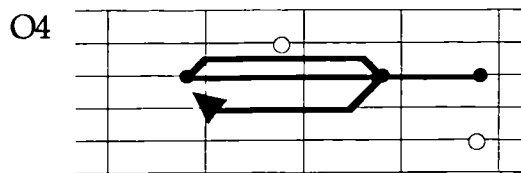


I'm Not Rough. 4:4
 Have to Change Keys, chorus 3.4:4
 Have to Change Keys, chorus 5.5:1
 Blue Guitars, chorus 4. 9:4
 Lazy Woman Blues 4:4
 He's a Jelly Roll Baker 4:2

Fig. 3-86. Cell O3.

Cell O4 (fig. 3-87) is a one-off gesture that descends on the G string from the 7th to the 5th.

Strings used: G
 Tones used: 5th - 6th - b7th
 Gestures used: K

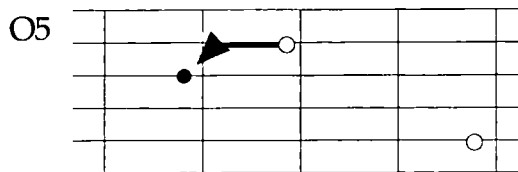


Misty Morning. 9:2

Fig. 3-87. Cell O4.

Cell J5 (fig. 3-88) steps down from the root note on the B string to the 5th degree on the G string.

Strings used: G/B
 Tones used: 5th - Root
 Gestures used:

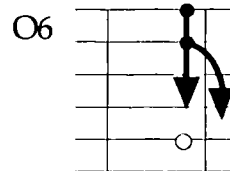


Blue Guitars, chorus 4. 1:3
 He's a Jelly Roll Baker. 10:3

Fig. 3-88. Cell O5.

Cell O6 (fig. 3-89) is a complex left hand movement pattern whereby the performer produces the 5th degree on the E string with the 3rd finger and then slips the finger across to the 2nd degree on the adjacent B which he then inflects.

Strings used: B/E
 Tones used: 2nd - 5th
 Gestures used: 5th - inflected 2nd

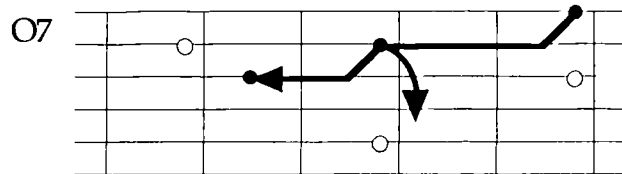


Blue Guitars, chorus 4. 4:3

Fig. 3-89. Cell O6.

Cell O7 (fig. 3-90) is a pattern that descends an octave across three strings from the 6th degree via the inflected 2nd.

Strings used: G/B/E
 Tones used: infl. 2nd - 5th - 6th
 Gestures used:

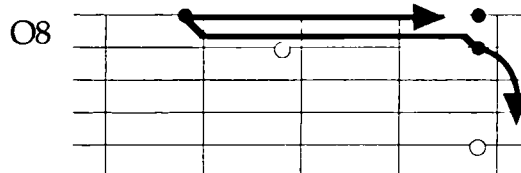


Love is the Answer. 4:4

Fig. 3-90. Cell O7.

Cell O8 (fig. 3-91) is a pattern that occurs twice in the same solo, but nowhere elsewhere in the transcriptions. The cell ascends from the inflected second to the 5th via the 3rd degree in a 4 - 1 - 4 left hand motion.

Strings used: B/E
 Tones used: 2nd - 3rd - 5th
 Gestures used:

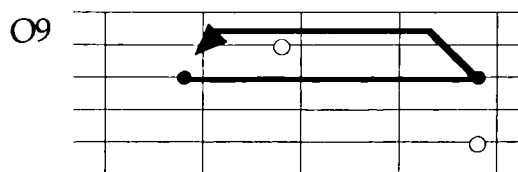


I'm Not Rough. p.u., 3:4

Fig. 3-91. Cell O8.

Cell O9 (fig. 3-92) is a one-off pattern that makes use of the $\flat 7$ th on the G string. The cell features a rare left hand toggle motion between left hand fingers 1 and 4.

Strings used: G
 Tones used: 5th - $\flat 7$ th
 Gestures used:



Misty Morning. 8:3

Fig. 3-92. Cell O9.

Cells O10 (fig. 3-93) and O11 (fig. 11. 3-94) are two related gestures. Both occur in period B, O10 from the 1941 recording *Lazy Woman Blues* and O11 from the 1949 recording of *She's So Sweet*, occur at the opening of the solo in the pick-up bar, and feature a four note chromatic ascent and descent pattern on the D string articulated with a 1 - 2 - 3 - 4 - 3 - 2 - 1 left hand motion.

Strings used: A/D

Tones used: Root - 3rd - 4th - #4th - 5th

Gestures used:

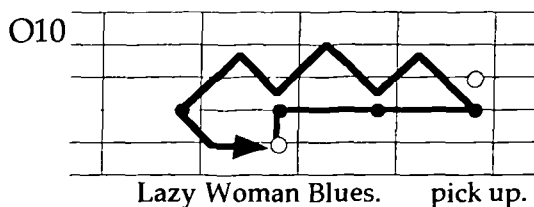


Fig. 3-93. Cell O10.

Strings used: A/D

Tones used: Root - 3rd - 4th - #4th - 5th

Gestures used:

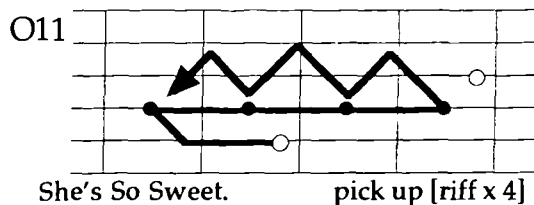


Fig. 3-94. Cell O11.

Cell O12 (fig. 3-95) occurs twice in the transcriptions once in each period. The first occurrence is in the 1928 recording 'Have To Change Keys To Play These Blues' and the second, from the 1949 recording 'She's So Sweet'. Both occur in the same metric position at bar four emphasising the $\flat 7$ th degree before moving to the sub-dominant chord in the ensuing bar.

Strings used: G/B

Tones used: Root - $\flat 7$ th

Gestures used:

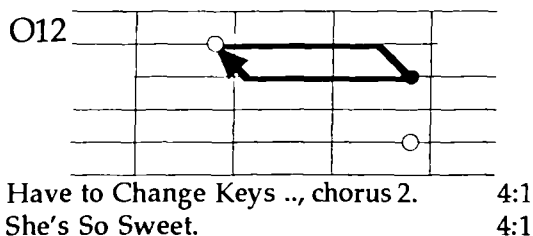


Fig. 3-95. Cell O12.

3. 6. Larger motives.

The following section considers the layout of the cells within the twelve bar model. It has already been suggested, for example, that certain cells have a harmonic implication, thus they will be located at the underlying I, IV and V chords.

The cells displayed above, when joined together in various ways, form cadential and other longer motivic phrases that occur throughout the transcriptions and are the ingredients of Johnson's style. Longer motives are sub-divided into three groups.

- A chord form motives
- C chord form motives
- Combined C and A chord form motives

3. 6. 1. Cell layout in the model.

Volume two fig. 48 shows the location of all of the cells groups, A - O, within the twelve bar model. Certain features emerge by reading the vertical columns. With the exception of the first two solos, *x* motives tend to proliferate in bars 5 and 6, mainly because of the harmonic influence of the sub-dominant chord. There is also a proliferation of V motives at the arrival of the dominant chord at bar 9. In seven of the twenty two solos an A1 motive appears at bar 6:4. This cell features a step down from, and return to the root note. Here the performer seems to be affirming the return to the tonic chord from the sub-dominant in the ensuing bar. Similarly there are ten examples of the B3 cell, a root - 2nd - root movement, in the final bar of the dominant chord.

Some of the most striking similarities are shared by 'Little Rockin' Chair' and 'I Can't Sleep Anymore'. These two later solos from the transcriptions, recorded two years apart in 1950 and 1952, are an indication that Johnson's improvisatory style was becoming more idiosyncratic and in both of the solos there are a string of O2 cells from bar 4:4 culminating in an octave leap cell in both solos at bar 6:4. Both feature a D4 cell at bar 7:2, I⁶ motives at 8:1 and V motives at bar 9:1.

3. 6. 2. Cadences figures.

In all but 2 of the 22 transcribed solos Johnson closes the solo with 2 melodic cadential phrases. The first, ending on the tonic note as the dominant chord resolves onto the tonic chord at bar 11, is followed by a second, shorter cadential phrase which also closes on the tonic note. It is in the cadences that it becomes particularly

apparent that much is familiar in Johnson's playing and yet much is different. Cadence figures reveal characteristic traits of Johnson's performance practise; particularly movement between the C and A shape chord forms. They show a wealth of variation in related fingering patterns. No two cadences are identical and yet each is composed of comparable cells. For comparison the cells that make up the two cadence figures in each solo are shown in the chart below.

Solo No.	Cadence 1	Cadence 2
1	A2 - O1 - D1 - D3	D1 - E1 - B1
2	A2 - D5 - B1	D1 - D3 - B1 - A1
3	E1 - B1	D3 - E1 - B1 - A1
4	E7 - B9 - B3	B10
5	C5 - E6 - B1 - B3	D1 - E1 - L3 - A1
6	A2 - B1 - A1 - B3	E10 - L1 - B1 - A1
7	B1 - A3	B1
9	B1 - B4 - A1	I6 - A2
10	A1 - B3 - B3 - A3	E5 - L3 - A1
11	B3 - A3	D1 - L5 - B8
12	O3 - B4 - B2 - A1	D1 - E5 - L3 - A1
14	A - O1 - O5 - B3	A2 - B3
15	A1 - D1 - D3 - B3	8ve - B1 - B4
16	I6	O1 - B4
17	A3 - B3	D1 - D3 - A1 - B1
18	A2 - B3 - B3	<u>E shape cadence</u>
19	A1 - O1 - B9	I6 - A2 - B1 - B3
20	A2 - O1 - B3 - B3	<u>E shape cadence</u>
21	C1 - 8ve - B3	D1 - D3 - A3
22	A2 - O1 - B3	I6 - A2 - B6

Fig. 3-96. Cadential figures.

It can be seen that the two cadence phrases comprise from one to four cells. The most commonly recurring cells are shown in the figs. 3-97 and 3-98 which display the cell and the number of occurrences throughout the cadence figures.

1	2	3	4
A2 - 6	O1 - 5	B3 - 6	B3 - 5
A1 - 3	B3 - 3	A1 - 2	
B1 - 2	B1 - 2	B1 - 2	
B4 - 2			

Fig. 3-97. Recurrent cells, cadence 1.

1	2	3	4
D1 - 7	A2 - 3	B1 - 5	A1 - 5
	D3 - 3	B1 - 5	
	E1 - 3	A1 - 2	

Fig. 3-98. Recurrent cells, cadence 2.

Two cadential phrases, fabricated from the most commonly occurring cells in the above charts, are presented here:

- Cadence 1: A2 - O1 - B3 - B3
- Cadence 2: D1 - E1 - B1 - A1

These two cadences occur in Johnson's transcriptions (cadence one in solo 20, 'Little Rockin' Chair', and cadence two in solo 2, 'Mr. Johnson's Blues', chorus 4), and can be seen on the transcriptions at volume two fig. 26 and fig. 3 respectively.

Cells are abutted or dovetailed together. Cells are abutted when placed one after the other and dovetailed when the last one or two tones of one cell are also the first tone of the next. In the cadence at volume two fig. 3, 'Mr. Johnson's Blues', the first and second pairs of cells, D1 - D3 and B1 - A1, are dovetailed and the two resulting halves are abutted.

The layout of these cadence phrases, to borrow Schuller's term, "... lies beautifully in the hand" (1989: 569) and represents fingering patterns on the instrument that are well practised by the performer. Thus two aspects that effect the structuring of the improvisation are the spatial and the kinaesthetic.

3. 6. 3. A shape motives.

Volume two fig. 49 shows four motives that are played at the A shape position each with between three and six recurrences. The first two phrases, consequent to C shape motives, occur after a slide up to the A position. Two motives are inversions of each other: fig. 49-1 comprises cells D3 - E10 and fig. 49-2 E10 - D3. The two motives, covering a four fret span, are executed with one finger at each fret. Unlike Bailey's *dutar* observation "the second or third finger is used to stop frets above that held by the first finger" (1985: 255); here a complicated finger sequence occurs where the fourth finger is used to stop a fret above the third finger.

Volume two Fig. 49.3, featuring chromatic movement, is centred on the 5th degree on the E string.

3. 6. 4. C shape motives.

Volume two Fig. 50 shows eleven motives in the C shape area with between three and eleven recurrences. The characteristic left hand patterns used in this group of motives conform to Baileys observations in that much of the gestural activity is formed by using the second and third fingers to fret tones above the first finger which is anchored at the principal tone - the root note on B string.

3. 6. 5. Combined A and C shape motives.

Volume two Fig. 51 shows motives of varying complexity that bridge A and C areas, thirteen in all, with between three and fifteen recurrences. Seven of the thirteen examples on fig. 51 contain the cell D1, which is Johnson's characteristic position shift from the C to the A position. The gestures are ascending (fig. 51-1, 2, 3, 4, 6, 7 and 13) where the index finger anchor point shifts from the root on the B string to the 5th on the E string, and descending (fig. 51-5, 8, 10, 11 and 12) the inverse of the above.

3. 6. 6. Rhythmic aspects.

The different rhythms that occur for each of the movement strategies in the solos are shown alongside the diagrams.

It is in the area of rhythm that the greatest variety can be found in Johnson's improvisations. The fingered tone sequences are clearly not inhibited by rhythmic patterning: exact couplings of a motivic structure with a rhythmic pattern, termed 'duplicates', are comparatively rare. It is not uncommon for Johnson to articulate each occurrence of an identical motive in a different rhythm.

As an example motive x^a1 (volume two Fig. 39) occurs as a riff in three different solos. The motive always occurs in a triplet grouping but in each of the three examples the triplet grouping is placed on a different part of the beat.

Two of the motives on the Volume two Fig. 51 have a far greater number of rhythmic/melodic duplicates; the motive D1 - D3 (volume two fig. 51-1) is the most commonly recorded in the work under examination here with a total of fifteen occurrences of which eleven are duplicates. This is remarkable in that the next most common duplicate is the six times repeated motive A2 - D1 (volume two fig. 51-3). Other than this there are only two or three duplicates of a few of the other motives.

Four occurrences of the motive D1 - D3 (volume two fig. 51-1), taken from period A, are executed with a different rhythm. Eleven of the occurrences are from

period B and all of these are duplicates (rhythm v). This is another indication that Johnson's later improvisations are more idiosyncratic than those of the early period. With the exception of rhythm iv the four tones of the motive D1 - D3 are placed close together rhythmically. They occur as a four tone swung crotchet group either on the beat (rhythm i), or off the beat (rhythm ii). Rhythm iii mixes a triplet group with swung crotchets, and is placed across the barline. The eleven recurrences of rhythm v open with a one tone triplet pick-up, followed by a triplet grouping of the ensuing three tones. This places the glissando up to the A position on the beat.

In order to place this motive in a larger context the surrounding cells were examined. In four examples the motive D1 - D3 is preceded by the cell A2. And the motive is quitted by the cells E10 and D3 three times each. The four cell structure A2 - D1 - D3 - E10, however, occurs in only two examples and these are not to identical rhythms.

The motive A2 - D1 (volume two fig. 51-3) shows a similar distribution: it only occurs once in period A in the 1928 solo 'Have to Change Keys to Play These Blues'. Of the remaining eight occurrences, taken from period B. six are duplicates executed in a triplet rhythm (rhythm ii).

The instances of repetition on the C shape structures (volume two fig. 50) are similar; of the eleven motives one has three duplicates (B1 - A1, fig. 50-2) and four have two duplicates.

All of the motives illustrated as the specific groups: *x*, I⁶, IV and V motives (volume two figs. 39 - 43) are unique. Each of the groups has similarities but differ in detail either rhythmically or melodically.

3. 7. Left and right hand articulation and co-ordination.

The guitar strings can be played open or stopped at a fret with a left hand finger. The strings are articulated by the right hand with either fingers or a plectrum (or pick). The fingers pluck the strings or else the plectrum is used as an implement to pluck the strings. There are two possibilities with the plectrum; up-stroke and down-stroke.

There are two particularly striking features of Johnson's right hand performance practise:

- Almost every tone is plucked by the performer's right hand. Tones are cleanly and boldly articulated and his rhythmic playing is precisely defined and never disordered in execution. Hammer-ons and pull-offs

(described below), seldom used, are confined to a few practised localised gestures.

- It is not uncommon for Johnson to set up an insistent right hand rhythmic motor pattern that continues relentlessly throughout a solo with little or no variation. The most extensive examples are 'I'm Not Rough' from period A and 'Lazy Woman Blues' and 'You Take Romance' from period B. Repeated tones feature in these solos but Johnson also displays a fluency in the connection of his cell forms to produce a seamless texture.

Comments pertaining to right hand articulation, particularly with reference to the early period, are somewhat speculative without the aid of visual documentation. Transcriber Stefan Grossman has said "He [Johnson] was never interviewed in depth about his life or guitar techniques - what a crime, since his guitar playing has so many mysteries... I cannot think of another guitarist who changed his style and technique so dramatically" (1993: 62) The dramatic change of technique came about primarily because of the adoption of the plectrum by the performer. As Johnson is known to have used a dropped D tuning in the early period in order to provide some accompaniment to his melodic lines it is likely that he used his thumb on the bass strings and a finger, or fingers, for the melodic material. Describing his technique Johnson said:

I used to play with my fingers all the time. That's the way I first started making records. I played a twelve-string instrument, but the public got so loud that I couldn't make them understand anything, and so I started playing with a guitar pick. That was in 1941 and I've been playing it ever since (Wilmer 1963 6).

Clearly Johnson adjusted his technique during period B. The first recording of the later period transcribed here was undertaken in 1941.

Grossman poses the question "...how many fingers did he use? Thumb and index only, as many old bluesmen did, or perhaps middle and ring as well? I tend to hear thumb and index with occasional help from his middle finger" (1993: 62). There is some evidence that he used more than one left hand finger in 'Mr. Johnson's Blues', chorus 2, at bar 9 where he executes a rapid descending semi-quaver arpeggio figure across three strings. It seems probable that in order to execute this figure at this speed the performer would have to place either one finger on each string or, more likely, two fingers with the thumb on the lowest sounded string as indicated below (fig. 3-99):

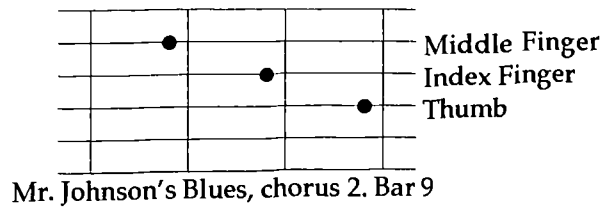


Fig. 3-99. Johnson arpeggio.

3. 7. 1. String inflection.

There are a number of left hand techniques that are commonly utilised by the improvising guitarist whereby more than one tone is produced from a single right hand pluck. These are string inflections (of which there are various types), hammer-ons, pull-offs, and slides. Lonnie Johnson makes use of all of these techniques to varying extents. The most common of these techniques in Johnson's improvisations, the string inflection, occurs as two different types:

- A string bend is when a string is struck at a particular fret location, and then inflected in order to raise the pitch. String bends on the guitar are most commonly a semi-tone, a tone, and occasionally a tone and a half. But string bends that do not conform to equal temperament are particularly common in Johnson's inflections.
- A bend and release is when the performer plucks a string, inflects it, then releases the inflection to return the string to the original pitch, thus producing three different tones from a single pluck with the right hand.

There are 108 string inflections in period A occurring at three different locations: 93 times as the 2nd inflected to a neutral 3rd on the B string; 11 times as the 2nd to the neutral 3rd on the E string; and 4 times as the 6th to the flattened 7th on the E string. Thus all string inflections in Johnson's output are to neutral blue tones. It is probable that all of these inflections are executed with the left hand third finger as the inflected 2nd degree is located two frets above the root note and the 6th degree two frets above the dominant note. The index finger would be anchored at the position of either the root note or the dominant note and, together with the thumb that opposes it on the back of the guitar neck, function as a fulcrum. The wrist pivots about this to instigate the string inflection.

In period B only one tone is inflected throughout the transcriptions, and that is the second degree to the neutral third, which occurs 191 times.

An extension of the bend and release technique is occasionally employed by Johnson whereby a fretted tone is sounded and inflected. The inflection is then

gradually released while re-articulating the descending string in a persistent right hand rhythm. This technique is seen at bars 2 and 10 of the 'I'm Not Rough' solo.

3. 7. 2. The slide.

A slide is produced when a string is plucked with a left hand finger at a particular fret location and the same left hand finger ascends or descends along the string to a different fret location to produce a second tone. Slides, which are a characteristic feature of Johnson's improvisations, are frequently employed to instigate a change of position. Four gestures prevail in the analysis; the most common of the slides ascend from the C to the A position, as is seen in the cell D1. In cell D1, an ascending arpeggio figure, the left hand index finger is anchored at the root note on the B string. After sounding this tone the performer brings his ring finger down two frets higher on the second degree and immediately slides this finger up two frets to the third degree. The index finger is then brought down two frets lower, but on the adjacent E string, to produce the fifth degree (fig. 3-100).

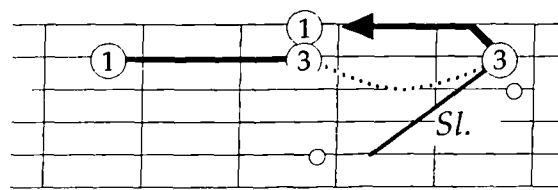


Fig. 3-100. Johnson slide.

In period B this same gesture, divorced from the function of changing position, is used decoratively in repeated riff patterns. After sounding the third tone of the cell the left hand is moved down two frets in order to slide back again into position (fig. 3-101):

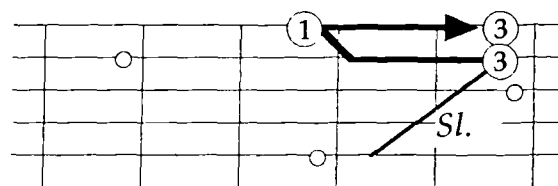


Fig. 3-101. Johnson slide b.

A slide is frequently employed by Johnson in cell A2. In this cell the performer has dropped back one fret out of the C position to produce the 5th degree on the G string. In order to get back to the root note the middle finger is placed one fret higher on the #5th degree on the G string and then slid up a single fret to the 6th degree (fig. 3-102):

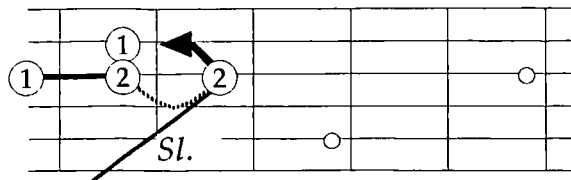


Fig. 3-102. Johnson slide c.

Johnson links together cells D4 and B7, whereby a slide up to the A position is mirrored by a slide back down to the C position (fig. 3-103):

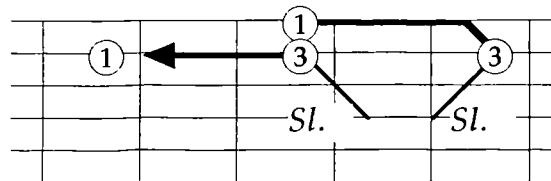


Fig. 3-103. Johnson slide d.

3. 7. 3. Hammer-on and Pull-off.

With a hammer-on a tone articulated by plucking the string is followed by a higher tone which is produced, by rapidly fretting the same string with a second left hand finger, but without re-articulating the string with the right hand.

A pull-off is made when two left hand fingers are initially placed on a string at different frets. The string is plucked to produce the higher tone then the left hand finger is lifted off the string to produce the lower tone.

Hammer-ons and pull-offs are comparatively rare in Johnson's improvisation because, as shown above, he chooses to articulate almost every tone. When used they occur at a few specific fretboard locations and often within specific bars of the model.

The hammer-on is the most commonly used of these two techniques, the majority of which are associated with the cell B3. They feature the root tone produced on the B string with the index finger, the ring finger is then hammered onto the same string to produce the 2nd degree two frets higher.

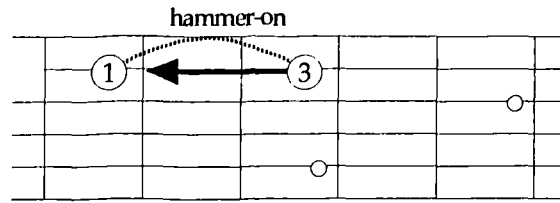


Fig. 3-104. Johnson hammer-on.

Johnson frequently employs this gesture during bar 10 of the model. Because the two tones are both produced by the left hand the move requires less co-ordination of the two hands and can therefore be produced more quickly than the same gesture with both tones separately articulated. The performer uses this device to increase speed on the drive towards the cadence. This same left hand gesture is also occasionally employed with the index finger anchored at the 5th degree on the E string.

Johnson also produces the same three tone series by a combined hammer-on, pull-off gesture. The first tone is plucked, the second tone produced by a hammer-on, and the return to the root note achieved by a pull-off.

From the 1942 solo 'He's a Jelly Roll Baker' onwards the cell E10 (A cell which occurred as early as the 1928 solo 'Have to Change Keys To Play These Blues') is articulated to include a pull-off. (fig. 3-105) This again facilitates an increase in speed, the pull off being accomplished at twice the speed of the surrounding tones.

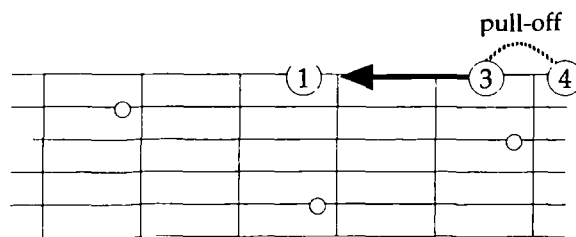


Fig. 3-105. Johnson pull-off.

3. 7. 4. Blue Notes.

Johnson's blues sensibility is particularly expressed through his use of inflected tones. As observed above all of the tones that he chooses to inflect are blue notes.

There are eight different variations on inflections of the 2nd degree to be found in the solos under analysis here. Some of the gestures are present throughout the entire of the artist's career whereas others occur at different periods. In the following diagrams (fig.3-106) pitch is displayed in the vertical dimension: the lower line of the box represents the 2nd degree, and the upper line the 3rd degree. Arrows depict the inflection of the string between these degrees. The horizontal dimension depicts time, which, in these diagrams is not absolute, but relative. The speed of an inflection is effected by the tempo of the solo and the duration of the tone, or tones.

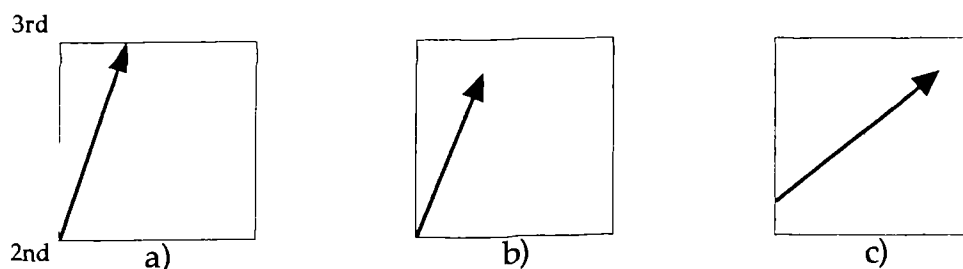


Fig. 3-106. Blue notes.

There are three varieties of straight ascent:

- a) The string is rapidly inflected right up to the 3rd degree. Here the blues effect is attained by the vocal-like slur between the 2nd and 3rd degrees. This type of bend occurs in the earliest recordings, particularly those between 1925 and 1928.
- b) Is a blue note proper, whereby the string is rapidly inflected to a neutral pitch between the major 2nd and 3rd degrees.
- c) Is a slower ascent to a neutral interval. Sometimes the tone is plucked after the inflection has begun as indicated in the diagram.

Three different types of inflection feature some type of release of the inflected string (fig. 3-107):

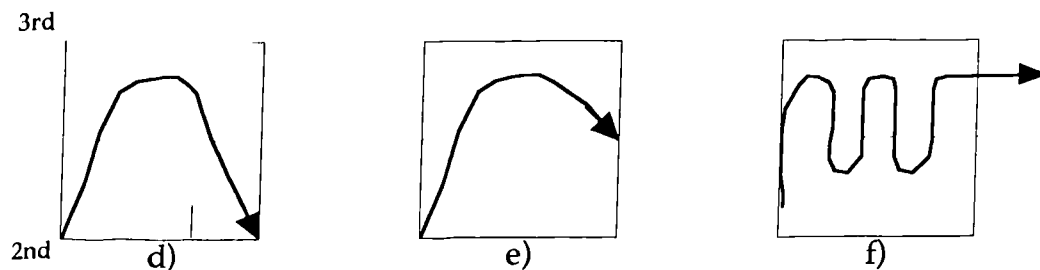


Fig. 3-107. Blue notes, bend and release.

- d) The string is inflected to a neutral interval and then the inflection released back to the 2nd degree.
- e) The string is inflected to a neutral interval then inflection slackened back towards the minor third.
- f) Features a 'shake' of the inflection where a neutral interval is repeatedly reached then released. This type of action occurs in the later recordings of 1947 onwards.

Two other string inflections are more complex and longer in duration (fig. 3-108).

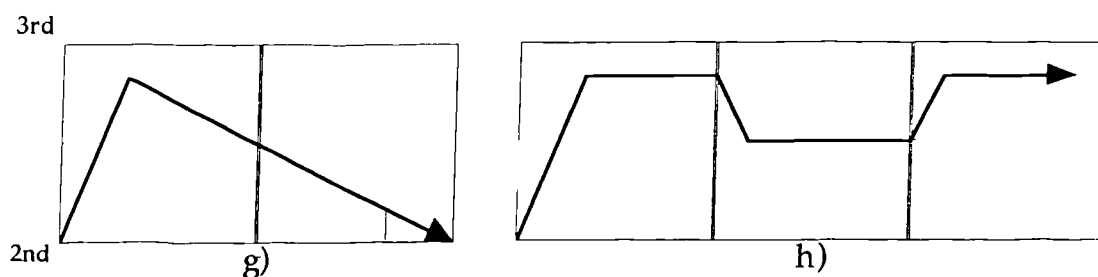


Fig. 3-108. Blue notes, bend and release.

- g) Features an inflection to a neutral area followed by a gradual release back to the 2nd degree. This type of action is often articulated with regularly repeated plucks with the right hand fingers or a plectrum. It occurs in solos intermittently throughout the two periods.
- h) Occurs at the opening of the 1952 solo 'I Can't Sleep Anymore', but a similar gesture occurs in the 1950 recording 'Nothing But Trouble'. The action features an ascent to a neutral 3rd, a slackening of the inflection to

the minor third and a return to the neutral 3rd. This action takes place over four bars and is articulated with a persistent right hand motor rhythm.

Generally the performer gives a slight accent to each of these inflections by plucking slightly harder with the right hand.

Blues elements may be introduced into piano playing by the addition of what are, in jazz parlance, termed 'crushed' tones (*acciaccatura*). These are designed to imitate the inflection of the guitar string, and are produced by a semi-tone *acciaccatura* often effected by sliding with one finger from a black note on to its adjacent white note. The most common of these on the piano is the minor third 'crushed' into the major third. This is the equivalent of the inflected 2nd degree illustrated above. This same effect is, however, also utilised on the guitar by placing the finger on the minor 3rd and sliding up one fret immediately after sounding the tone. Johnson uses this technique in 'Mr. Johnson's Blues', chorus 2 at bar 3:4. As it is more common for Johnson to articulate every tone he characteristically gives these two tones equal time and weight. The gesture occurs in cells B10, D2, and the cells Q1 - Q5.

3. 8. Summary and comments.

The analysis has constructed a model of Lonnie Johnson's improvisational practice by two means; reduction and expansion.

Reduction operated on four levels; transcription, tone count, hierarchy and scale. The transcriptions of twenty two of Johnson's melodic guitar improvisations were subject to various statistical procedures beginning with a count of the tones employed in each solo. The tone counts were sub-divided into three groups; principal, secondary and incidental in order to strip away the occasional and isolate the persistent, fundamental underlying characteristic patterns of movement in Johnson's style. The data collected was reduced to a scale.

All of the above factors were displayed on a form of graphic notation which represented the fretboard of the guitar, in accordance with the basic proposition that performance on different instrument requires the adoption of different physical skills; and in the course of performance the construction of the instrument effects the nature of the music that is produced on it. The data indicated that C and A chord forms underlie the positions at which Johnson chose to improvise and, because of this, certain melodic tones fall beneath the fingers.

Expansion operated on three levels; gesture, cell and motive. Having reduced the output to a modal hierarchy individual tones were then examined for gestural activity; from a given tone, what tone follows? Three tone gestures, representing patterns of movement, were catalogued and termed cells. From this the analysis considered the linking together of cells into motives. It was found that certain motives were formed in response to underlying I, IV and V harmonies of the twelve bar model. Other motives were sub-divided into three categories located above different chord forms; C chord, A chord and motives that bridged C and A forms.

The physical size of the fretboard of the guitar is such that the four fingers of the left hand fall conveniently one to each fret; thus a four fret span can be covered without a change of position. Johnson predominantly elects to use two such positions; the C chord area and the A chord area located two frets above. In the C and A chord areas the tonic note on the B string and the dominant note on the E string are the respective principal tones which act as anchor points for the index finger about which gestural activity is centred.

Johnson's predominant left hand movement patterns occur by alternating between finger one and fingers two, three or, to a lesser extent, four in a 'toggle' action. finger three is occasionally used against finger two and, occasionally, finger

four against three; the latter occurring most frequently in a left hand four - three - one descent on the E string in a practised, localised gesture. Fingers two and four were not found to be paired.

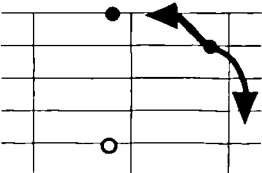
Johnson was an influential guitarist and the evolution of his style has been traced over timespan of twenty seven years. Certain gestures occurred throughout the transcriptions, which are snapshots of his improvisatory technique at a moment in time, others in one or two recordings, while others still were added in later recordings, perhaps showing the influence of other guitarists with whom Johnson came in contact. Musical patterning has an effect on the structure of music as was seen particularly in the cadence phrases, two occurring at the end of each model, that were similar but never identical. Such phrases indicate that practised sequences of left hand movement that lie beneath the fingers are exploited by the improvising guitarist. It is in the fingering strategies that Johnson's employed that the specific nature of his influence can be discerned on later players, notably B. B. King, who deliberately imitated his style. Thus melodic elements formed from these gestures have entered into a repertory of instrumental blues.

3. 9. Postscript: T-Bone Walker and the A chord position.

It has been seen from the above that Johnson improvises extensively in the C and A chord shape areas. Although similarly classified as a blues player it will be seen that T-Bone Walker makes use of very different fretboard strategies to Johnson. In the transcriptions he makes one single cell in the A shape chord region and no use of the C chord region. Walker improvises instead, almost exclusively, on the E chord shape area so much so that many of the common fund of blues motives and gestures are constructed in this scale position.

The sole example of Walker's use of the A position is shown here (fig. 3-109). In this cell, the repetition of a gesture seventeen times executed with a 2 - 1 left hand action, the two tones are the inflected 3rd degree on the B string and the 5th degree on the E string. Johnson makes no use of the inflected 3rd degree on the B string.

String(s) used: B/E
Notes used: b3rd - 5th
Gesture(s) used:



Mean Old World, chorus 2. 1:1. (riff x17)

Fig. 3-109. Walker chord A form riff.

Many blues soloist's following Walker's model rely on extensive use of this E position. Johnson's usage of this chord area is confined to a the cadence figures discussed above. There will be an examination of improvisations that make use of the E shape chord area in the following chapter.

CHAPTER FOUR

IMPROVISATION ON THE E CHORD FORM

4. 1. Melodic resources - fretboard position and scale layout.

Transcriptions have been made of twenty three improvised twelve-bar blues choruses by T-Bone Walker derived from fourteen recordings (Fig. 4-1). These recordings, shown in volume two figs. 53 - 75, span a period of 5 years from 1942 to 1947. In eight of the recordings Walker improvises on two or three consecutive choruses. It can be seen from the dates that a number of the recordings were made at the same session. The analytical procedure employed is the same as that prescribed for the Lonnie Johnson transcriptions. A complete list of recordings including the recording number is shown on volume two fig. 52.

Solo number	Date	Title	Key
1 & 2	20/07/1942	<u>I Got A Break Baby</u>	C
3 & 4	20/07/1942	Mean Old World	G
5	1946	<u>Bobby Sox Blues</u>	Ab
6 & 7	1947	<u>T-Bone Jumps Again</u>	C
8	1947	<u>Stormy Monday</u>	G
9	1947	<u>Description Blues</u>	Ab
10 & 11	1947	T-Bone Shuffle	G
12	1947	Wise Man Blues	G
13 & 14	11/1947	<u>You're My Best Poker Hand</u>	Bb
15	11/1947	First Love Blues	Ab
16, 17 & 18	06/11/1947	Too Much Trouble Blues	C
19 & 20	06/11/1947	<u>Hypin' Woman Blues</u>	G
21	06/11/1947	<u>On Your Way Blues</u>	Bb
22 & 23	06/11/1947	<u>She's My Old Time Used To Be</u>	G

Fig. 4-1. T-Bone Walker transcriptions.

As with the Johnson examples a tone count of each complete solo is presented on fretboard notation (volume two fig. 76).

'T-Bone Shuffle' chorus 2 (volume two fig. 76-11) contains the fewest tones (ten) throughout this set of transcriptions. 'Description Blues' (fig. 76-9) contains the most tones; twenty six. 'Stormy Monday' (fig. 76-8) is the second highest; nineteen. These two highest figures occur as a result of an uncharacteristic change of

fretboard position by Walker who thus incorporates a greater number of tones into these performances. In the 'Description Blues' solo a one-off harmonic motive (examined below) adds nine tones that do not occur elsewhere in the transcriptions.

The total number of different tones used per solo throughout the twenty three transcriptions is shown in fig. 4-2. The solo number is shown in row one and the number of tones in row two.:

11	13	14	16	6	10	12	17	18	19	22	23	3	7	20	2	21	1	4	5	15	8	9
10	11	11	12	13	13	13	13	13	13	13	13	14	14	14	15	16	16	16	16	17	19	26

Fig. 4-2. Number of different tones used in the solos.

This gives a difference of sixteen tones from the minimum of ten to the maximum of twenty six, a median of 13, and a mean of 14.3. This is the same sort of span of different tones that the Johnson statistics revealed.

4. 1. 1. Stemplots.

Volume two fig. 77 shows the frequencies of the tones derived from the Walker transcriptions laid out in stemplots. These are used to discern the principal, secondary and incidental tones of each solo. Each of the examples is skewed, the most extreme being 'Description Blues' with eighteen tones below the mean, and eight tones above the mean.

There are four outliers that are outlined on fig. 77. These occur in:

- 'I Got A Break Baby', chorus 2,
- 'T-Bone Shuffle', chorus 1,
- 'On Your Way Blues', and
- 'She's My Old Time Used To Be', solo 1.

All four of these outliers are on the 5th degree on the B string. The increase in the instances of this tone in these four solos is accounted for either by riff figures or the use of repeated tones.

Information derived from these stemplots; principal, secondary and incidental tones, is presented on volume two fig. 78. The tone hierarchy shown on these diagrams is not key specific but is shown as relative to the E shape tonic chord in the first diagram of the chart. What is immediately evident in these diagrams is

that, with only three exceptions, all of the tones occur within a four fret span of the fretboard. The exceptions are:

- 'Mean Old World', chorus 2, (fig. 78-4)
- 'Stormy Monday', (fig. 78-8)
- 'Description Blues'. (fig. 78-9).

This is particularly notable when compared with the layouts on the Lonnie Johnson examples in volume two, figs. 16 and 31. With one left hand finger per fret Walker can articulate all of these tones without a change of position. Of the exceptions, the first occurs during the opening three bars of 'Mean Old World', chorus 2. Two tones are derived from a seventeen times repeated A chord form position riff examined in the previous chapter. The other two exceptions are both responses to a change of harmony; the first, in 'Stormy Monday' (volume two fig. 78-9) is a riff against the sub-dominant chord for which Walker has changed position and plays relative to the E shape of the sub-dominant chord, the second, in 'Description Blues', (volume two fig. 78-10) is a one-off whole-tone motive against the dominant chord.

4. 1. 2. Principal tones.

Volume two fig. 79 shows the stemplots of the accumulated frequencies of the principal tones. Two outliers, the 5th on the E string and the neutral third on the B string, are indicated together with their source solo. Both of these outliers are from the A chord form position riff in the opening bars of the 'Mean Old World' solo described above.

The only principal tone that occurs inconsistently, with the exception of those outliers described above, is the neutral 3rd on the E string the value of which varies from zero articulations to twenty-two.

The accumulative totals of the principals are shown in the following table (fig. 4-3), the outliers having been omitted, in hierarchical order.

	TONE	STRING	TOTAL
1	5th	B	348
2	Neutral 3rd	G	299
3	Root	E	248
4	4th	G	187
5	Inflected 4th	G	179
6	Root	D	164
7	\flat 7th	B	123
8	6th	B	102
9	Neutral 3rd	E	80
10	Inflected 6th	B	55

Fig. 4-3. Accumulative totals of principal tones.

The following scale, reduced to one octave, is represented in the above table:

- Root - neutral 3rd - 4th - inflected 4th - 5th - 6th - inflected 6th - \flat 7th.

This corresponds to the conventional textbook definition of the blues scale but with the addition of the 6th degree and contrasts with the Johnson scale shown at chapter 3. 1. 3.

- The second degree is absent, as a principal tone, from Walker's scale.
- The neutral or blue third is achieved in Johnson's performance practice by inflection of the second degree. This tone is fretted by Walker.
- The \flat 7th, a blue note that is not favoured by Johnson, gains a prominent position in the improvisations of Walker.

Thus the choice of different fingered fretboard positions on the instrument by these two performers has major repercussions on their different tone hierarchies.

4. 1. 3. Fret position accumulation.

Volume two fig. 80 shows the number of solos in which specific fret positions occur throughout the 23 solos. It can be seen at fig. 80-2 that the root on the D string, the neutral 3rd, 3rd, 4th, inflected 4th on the G string, the 5th, \flat 7th on the B string and root on the E string occur throughout all of the twenty three transcriptions. On

fig. 80-3 it can be seen that only one of these, the 5th degree on the B string, is a principal tone in all 23 of the solos.

As with the Johnson analysis it can be deduced from this chart that certain important tones are treated differently in different octaves. The root on the E string, which occurs throughout, is a principal tone in eighteen of the solos and a secondary tone in five, whereas the root on the D string, also occurring in all solos, is a principal in six, a secondary in fourteen and an incidental in three. The 5th degree on the B string is a principal tone in all examples but the 5th on the A string occurs only as a secondary or, more frequently, as an incidental tone. The neutral 3rd on the G string occurs as a principal tone in twenty two of the examples, but only three times on the E string.

The following is the number of occurrences of the principal tones presented as a hierarchy as derived from volume two fig. 80:

	TONE	STRING	TOTAL
1	5th	B	23
2	Neutral 3rd	G	22
3	Root	E	18
4	4th	G	9
5	Inflected 4th	G	9
6	Root	D	6
7	Neutral 3rd	E	3
8	♭7th	B	2
9	6th	B	1
10	Inflected 6th	E	1

Fig. 4-4. Principal tones hierarchy.

From the above tables of frequency of tones and number of solos in which they occur as principals we derive the following ten tone fingering component (fig 4-5) which lies in a position relative to the E chord form.

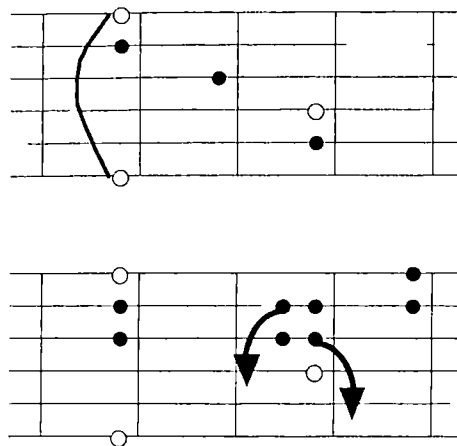


Fig. 4-5. Ten-tone finger component relative to the E chord form.

Both Johnson and Walker have different styles even though both work within the blues genre. The corresponding finger component in the previous chapter is at fig. 3-13 and it can be seen, by comparing this with the above fig 4-5, that the two players frame their solos in completely different areas of the fretboard. Because gestural activity most commonly occurs by opposing finger one against fingers two, three or four the guitarist anchors finger one at a fret location and produces other tones above this point. For Johnson, it was seen, there are two anchor points; the root on the B string at the C chord form and, two frets higher, the 5th on the E string at the A chord form. Johnson's gestural activity was thus sub-divided into C and A form gestures and gestures that bridge C and A forms. In contrast to this the main anchor point that Walker elects to use for his index finger is the 5th on the B string relative to the E chord form; he then utilises a combination of tones in his solos with fingers two, three or four, in such typical left-hand fingering 'toggle' gestures as 1 - 3 - 1, from the three frets above this point. The artistic decision to use this area has repercussions on Walker's style. Style is thus effected by the instrument and spatio-motor considerations.

4. 1. 4. Timeplots of the Principal Tones.

Four graphs (volume two figs. 81 - 84) show a timeplot of the principal tones throughout the 23 solos; one for each of the strings on which those tones occur.

There are two tones represented on fig. 81, the graph of principal tones on the E string, the root note and the neutral 3rd. The root note on the E string is fairly consistent throughout. The lowest point, only four occurrences, is in solo 4 'Mean Old World' chorus 2 and the highest point of nineteen occurrences is in solo 22 'She's My Old Time Used To Be' solo 1. The neutral third on the E string is far more varied in its distribution. Three solos have peaks on the chart, solo 7 'T-Bone Jumps Again' chorus 2, solo 11 'T-Bone Shuffle' chorus 2 and solo 21 'On Your Way Blues'. Each

of these solos opens with repetition of the neutral third on the E string. The tone is repeated ten, fourteen and sixteen times in the respective solos, furthermore it is only in these three solos that the neutral third on the E string assumes the status of a principal tone.

The distribution of the four tones represented on the graph of principal tones on the B string (volume two fig. 82), the 5th, 6th, inflected 6th, and the flattened 7th, is fairly consistent. The 5th on the B string always has a higher value than other tones on the same string. Peaks in tones tend to occur simultaneously, indicating that in those particular solos there is a general increase in gestural activity on the B string.

The graph of principal tones on the G string (volume two fig. 83), the neutral 3rd, the 4th, and the inflected 4th, shows some fluctuation of values. Again peaks tend to occur for each of the tones simultaneously because of gestures centred on the G string.

Only one tone appears on the graph of principal tones on the D string (volume two fig. 84); the root note. Peaks on the graph occur in solos where there is a preponderance of gestures that contain that tone as in, for example, solo 1 'I Got a Break, Baby' chorus 1. That solo features riff figures and repeated tones centred on the root note.

4. 1. 5. Accumulative totals and percentages.

The accumulative totals, shown on volume two fig. 85, reveal that in Walker's performance practice the dominant note on the B string is the most commonly articulated tone with 348 occurrences, that is 17% of the total tone count. The three most prevalent tones in Walker's hierarchy are those which are produced by placement of the index finger on one of the top three strings: the root note on the E string (12%), the 5th on the B string (17%), and the neutral 3rd on the G string (14%). In many of his movement strategies Walker uses the index finger as an anchor point, or gravitational centre, from which he makes excursions up the fretboard to other motivic resources.

By eliminating the incidental tones and outliers Walker's performance practice juxtaposes elements derived from two scales; the "blues scale" and the pentatonic scale. In the principal tones the "blues scale" is represented by the following ascending tone series:

Root - neutral 3rd - 4th - infl.4th - 5th - \flat 7th - octave

In this series the inflected 4th may function as a blue note, the neutral 5th, depending on the degree of inflection.

The pentatonic scale is represented by the following:

Root - 3rd - 5th - 6th - octave

Secondary tones add the following to the blues scale;

- 5th on the A string
- \flat 7th on the D string
- \flat 5th on the G - inflected 6th
- Inflected 2nd / neutral 3rd on the E string

and the following tones to the pentatonic scale:

- 5th on the A string
- 2nd on the E string

The major 7th tone also occurs as a secondary tone functioning as the third of the dominant chord.

Accumulative totals for the tones derived from the transcriptions are shown as percentages in fig. 4-6.

Root	2nd	n3rd	3rd	4th	\flat 5th	5th	6th	\flat 7th	Other
18.7%	3.4%	18.5%	4.3%	10.8%	0.4%	26.2%	6.2%	9.9%	1.6%

Fig. 4-6. Accumulative percentages.

There is considerably greater emphasis on blue notes in Walker's performance practice than in Johnson's. In the transcriptions of Johnson's solos the only blue note that occurs as a principle tone is the neutral 3rd which occurs both as a fretted tone and as an inflected 2nd. In Walker's scale the neutral 3rd, \flat 5th (inflected 4th) and 7th all appear as principal tones.

4. 2. Tone usage

Volume two fig. 86 shows the overall principal, secondary and incidental tone groupings derived from the accumulative totals shown on figure 85. These groupings are sub-divided in accordance with the accumulative totals stemplot

which is also shown on fig. 85. There are a total of nine principal tones derived from the total output.

It can be seen that this layout differs from Johnson’s scale layout (shown on volume two fig. 37). Walker’s principal tone layout corresponds approximately to a small grouping to the left in the 3rd diagram of Johnson’s figure 37. That is the grouping that is used for occasional cells in the early period and two cadential patterns in the later period by Johnson (In ‘You Take Romance’ and ‘Little Rockin’ Chair’). An area of the fingerboard that is only incidental to Johnson’s oeuvre, becomes paramount in the work of Walker. This inevitably gives rise to fundamental differences in the melodic material that each performer creates.

The overall principal tones and the number of occurrences throughout Walker’s transcriptions, derived from the stemplot in volume two fig. 85, is presented in the following table.

	Tone	String	Occurrences
1	5th	B	348
2	Neutral 3rd	G	299
3	Root	E	248
4	4th	G	187
5	Inflected 4th	G	179
6	Root	D	164
7	♭7th	B	123
8	6th	B	102
9	3rd	G	90
10	Neutral 3rd	E	80

Fig. 4 7. Overall principal tones.

This chart differs slightly from fig. 4-3 the principal tones hierarchy. The inflected 6th on the B string occurred in that chart because it is a principal tone in two solos; ‘Mean Old World’ chorus 1 and ‘Hypin’ Woman Blues’ chorus 2. The tone does not occur consistently throughout the transcriptions and thus does not appear in the fig. 4 7. Conversely, although it does not occur as a principal tone in the individual solos, consistent use of the 3rd on the G string leads to its inclusion in this chart.

Only two tones are duplicated in different octaves in this collection of principal tones; the root note which appears 3rd and 6th in the tone weighting, and

the neutral 3rd which occurs second and tenth. The scale and totals of overall principals reduced to one octave is as follows:

1	Root	411
2	5th	349
3	neutral 3rd	297
4	4th	189
5	Inflected 4th	178
6	♭7th	122
7	6th	103
8	3rd	90

Fig. 4-8. Overall principal tones, one octave.

By combining the totals of the two tones an octave apart greater emphasis is thrown on the root note. As in the Lonnie Johnson analysis we see an emphasis on the tonic/ dominant relationship.

The next step, as in the Johnson analysis, was to disclose a hierarchy of gestures between two tones. Volume two fig. 87 presents, in hierarchical order, the tones that occur within the E shape position throughout the transcriptions and the destination tones to which the performer moves.

The principal tones are followed by an average of seven different tones. (Johnson's average was eleven). It will be seen that in Walker's performance practice certain tones have a strong tendency to proceed in a particular manner.

Volume two fig. 87 shows the tones to which a given tone departs. The particular tone under scrutiny is displayed as a white square, root notes as white circles and other destination tones as black circles. The number alongside represents the number of times that tone is approached throughout the transcriptions.

4. 2. 1. Principal tones.

Fig. 87-1. The 5th on the B string.

- The predominant tone, the 5th on the B string, occurs 348 times (17%) throughout the transcriptions. Chart 96. 1 shows that the tone also has the largest number of departure tones.
- The 5th on the B string is quitted to fifteen different destination tones. That is fifteen different pathways that the performer opens up from this

single tone. The most insistent destination tones are to the root note on the E string, an ascending perfect fourth, with sixty seven occurrences. This interval is accomplished by laying the index finger flat across the two top strings of the guitar and plucking the B string followed by the E string. There is a 21% probability that after sounding the 5th on the B string the performer will move on to the root on the E string. The second most common destination tone is achieved by stepping down a major second with the third finger on to the G string. There is an 18% probability that this movement will follow the 5th on the B string. The third probability (17%) is the same descending major second gesture, but here concluded with the inflection of the tone.

Fig. 87-2. The neutral 3rd on the G string.

- The neutral 3rd on the G string is a blue note that occurs 299 times throughout the transcriptions. The tone is quitted to a total of eight different destination tones. Of these eight destination tones four are significant.
- The predominant gesture is a step up of a minor second (one fret) on the same string. This is achieved by moving from the index on to the second finger and occurs eighty six (30%) times. This represents a resolution of the neutral 3rd (#2nd) on to the natural 3rd. Two gestures share the same movement pattern: a step up of a major second (two frets) on the same string, the higher tone is articulated, or else the same tone is inflected to produce a higher tone. This is executed with a left hand 1 - 3 motion. The two fret ascent gesture occurs eighty times (27%). On thirty seven occasions the same gesture is completed by the inflection of the string. The tone is followed sixty four times (22%) by a descent of a minor third to the root note on the D string. The left hand motion is, similarly, 1 - 3, but here includes a change of string.

Fig. 87-3. The root note on the E string.

- This tone occurs 248 times throughout the transcriptions, and is quitted to a total of nine different destination tones.
- The most common movement (seventy nine times, 38%), a descending major second on to the $\flat 7$ th degree, is accomplished with a 1 - 4 left finger motion. There is a sharp fall off to the second most common gesture, the forty four times occurring side step of the first finger in a descending 4th motion from the E string on to the B string. The third most common gesture is a thirty three times occurring step up of two frets to the 2nd degree on the E string, accomplished with a left hand 1 - 3 finger motion.

Fig. 87-4. The 4th on the G string.

- The 4th degree on the G string occurs 187 times throughout the transcriptions.
- The predominant departure tone from the 4th on the G string is by a two fret descent to the neutral third executed with left hand fingers 3 - 1. It occurs one hundred and twenty two times, that is with a 68% probability. The second most common departure tone, occurring a mere twenty six times, is a descending perfect 4th. It is executed by a side-stepping motion of the third finger down on to the adjacent string.

Fig. 87-5. The inflected 4th on the G string.

- The inflected 4th on the G string occurs 179 times throughout the transcriptions.
- The distribution of this tone is consistent throughout the transcriptions, and there is great variety in the gestures that incorporate the tone. There are only five departure tones from the inflected 4th on the G string, four of which occur a significant number of times, and one incidental. The main movement is a 3 - 1 left hand motion on to the 5th on the adjacent B string. This occurs fifty four times (a 40% probability). Three other gestures occur a similar number of times:
 - 1) A release of the inflection and a re-articulation of the 4th degree at the same fret location,
 - 2) A left hand 3 - 1 step down a major second to the \flat 3rd degree, and
 - 3) A side-stepping motion down a perfect 4th on to the adjacent string.

Fig. 87-6. The root note on the D string.

- Of the six departure tones that are accomplished from the root note on the D string, only one occurs a significant number of times and that is the most prevalent gesture recorded throughout the transcriptions. It is an ascent of a minor third from the root to the blue third executed with a 3 - 1 motion. It occurs one hundred and thirty four times, that is an 88% probability that if the performer sounds the root note on the D string he will follow it with the blue third on the G string.

Fig. 87-7. The \flat 7th on the B string.

- There are 123 occurrences of the \flat 7th on the B string. The \flat 7 is commonly associated with the 6th degree, a semi-tone lower on the same string.
- There are three significant departure tones from the \flat 7th on the B string; A semi-tone descent on the same string (40%), A minor 3rd descent on the same string (39%) and A major second ascent upwards on to the adjacent string (18%).

Fig. 87-8. The 6th on the B string.

- The 6th degree on the B string occurs 102 times throughout the transcriptions. Motives that contain the 6th on the B string are evenly distributed throughout the model.
- The 6th on the B string predominantly moves by descent of a major second in a left hand 3 - 1 gesture on the same string. There is a 63% probability of this motion from the tone.

The 6th degree commonly functions as a passing note between the 5th and $\flat 7$ th degrees in descending or ascending motion.

Fig. 87-9. The 3rd on the G string.

- The 3rd on the G string occurs in all of the twenty three improvised choruses, and, although the tone is not a principal in any of the individual solos, it is through consistency of use a principal in the accumulative totals.
- There is an 87% probability that the 3rd on the G string will proceed to the 5th on the B string. The gesture is a 2 - 1 left hand motion.

The tone occurs predominantly in cells that are placed against the tonic chord, where, coupled with its usual destination tone, it forms a #2nd - 3rd resolution. In three of the solos, 'Mean Old World' chorus 1, 'You're My Best Poker Hand' chorus 2, and 'Too Much Trouble Blues' chorus 1 Walker places a tonic arpeggio motive against an underlying sub-dominant chord in bar six of the model. This is clearly a tonic gesture, as the opening two tones form the $\flat 7$ th - major 7th of the sub dominant chord. This can be seen as a demonstration of the liberal attitude that the performer may adopt to the harmonic structure of the underlying model.

Fig. 87-10. The neutral 3rd on the E string.

- The neutral 3rd on the E string occurs eighty times in the transcriptions. It occurs in nineteen of the twenty three solos but as a principal tone in only three: 'T Bone Jumps Again', chorus 2, 'T-Bone Shuffle', chorus 2, and 'On Your Way Blues'. In each of these cases there is greater emphasis placed on the tone through repetition.

There are four solos in which this tone occurs as a repeated tone. These solos and the number of repetitions are:

- 'On Your Way Blues'. 16 repetitions
- 'T Bone Shuffle' chorus 2. 14 repetitions
- 'T Bone Jumps Again' chorus 2. 10 repetitions
- 'Too Much Trouble' chorus 2. 5 repetitions

The device is, in all these cases, used at the opening of the model. It can be seen that Walker commonly employs the tone at the opening of the second chorus and, because it is a blue note, it heightens tension at the opening of the second improvisation.

It was shown above that Johnson uses a similar opening in two solos: 'Nothing But Trouble' and 'I Can't Sleep Anymore'.

The neutral 3rd on the E string, the highest tone in Walker's tessitura in the E position of the fretboard, is frequently played as the climactic tone in a phrase. Walker commonly gives the tone a slight inflection so that it is not the minor third but a neutral third pitched between major and minor 3rds, which adds to its tension. It is frequently the final tone of a phrase where it forms an unresolved tension against the underlying chord. In three examples ('Your My Best Poker Hand', chorus 1, 'On Your Way Blues', and 'She's My Old Time Used To Be', solo 1) it is the final tone of a complete twelve bar model.

As indicated in the transcriptions there is an 81% probability that the neutral 3rd on the E string will proceed by descending a minor 3rd to the root note on the E string.

4. 2. 2. Secondary Tones.

The eleven tones that occur as secondary tones are presented in fig. 4 9.

Tone.	String.	Number of incidents.
2nd	E	56
Inflected 6th	B	55
5th	A	31
neutral 3rd	B	19
5th	E	16
\flat 7th	D	14
\flat 5th	G	11
Inflected 3rd	G	10
Inflected 2nd	E	9
Major 7th	D	5

Fig. 4-9. Secondary tones.

Fig. 87-11. The 2nd on the E string.

- The 2nd on the E string has fifty six occurrences throughout the transcriptions.
- There is an 80% probability that Walker will proceed from this tone with a two fret descent on to the root note on the E string.

Fig. 87-12. The inflected 6th on the B string.

- The inflected 6th on the B string has fifty five occurrences throughout the transcriptions. The inflection of the 6th degree on the B string produces a blue note: the neutral seventh, which occurs in Walker's performance practice in a variety of contexts.
- The tone most commonly proceeds by ascending up to the root on the adjacent string, in a 3 - 1 motion, (64% probability). As such the tone is a common component of riffs. In 'Mean Old World', chorus 1 (bar 7, beat 2) the inflected 6th on the B string is a component of a two tone gesture that is repeated six times, each time resolving on to the tonic.

Fig. 87-13. The 5th on the A string.

- The 5th on the A string occurs thirty three times in the transcriptions.
- Of the six different destination tones the predominant is a step up of a minor third, in a 3 - 1 motion, to the \flat 7th on the D string.

The first two examples in 'First Love Blues' form a riff figure that is a melodic quotation derived from 'Blues in the Night', a twelve bar blues structured song which had been written in 1941 by Harold Arlen and Johnny Mercer.

The tone occurs, in 'T-Bone Jumps Again' chorus 2, and 'Description Blues' (two occurrences at bar 9:1 and 9:4, figure 12. 3), relative to the dominant chord. It is rare for Walker to employ motives that have strong harmonic implications for either the sub dominant or the dominant chords of the model. These two gestures will be examined at chapter 4. 4. 2 below.

Fig. 87-14. The \flat 7th on the D string.

- The \flat 7th on the D string has fourteen occurrences throughout the transcriptions.
- There are only two destination tones; a descent of a minor 3rd with a 1 - 3 left hand gesture to the 5th on the adjacent string and, a more common two fret ascent on the same string accomplished with a left hand 1 - 3 motion.

Fig. 87-15. The \flat 5th on the G string.

- There are eleven occurrences of the \flat 5th on the G string throughout the transcriptions.
- Walker always follows this tone in the same manner, by descending one fret to the 4th on the same string.

Fig. 87-16. The inflected 3rd on the G string.

- The inflected 3rd on the G string, with a total of ten occurrences throughout the transcriptions, appears in three solos: 'Bobby Sox Blues', 'Hypin' Woman Blues' chorus 2 and 'On Your Way Blues'.
- The inflected 3rd on the G string only has one destination tone; an ascent to the 5th on the B string.

Fig. 87-17. The inflected 2nd on the E string.

- The inflected 2nd on the E string occurs nine times and has three different destination tones. This tone is always placed in the latter half of the model.

Fig. 87-18. The major 7th on the D string.

- Of the five occurrences of the major 7th on the D string there are four different destination tones. The major seventh in the 'T-Bone Jumps Again' solo occurs at bar 9:3 against the dominant seventh chord, of which it is the third degree.
- The tone appears in the dominant motives examined below. The two examples in the 1947 recording 'First Love Blues' are at bar three in a riff formation. This is the melodic quotation derived from 'Blues in the Night', as described above.

4. 2. 3. Incidental Tones.

Nine tones that occur two times each in the course of the improvisations are shown in fig. 4-10.

	Tone	String
1	2nd	E
2	6th	A
3	7th	A
4	\flat 2nd	D
5	\flat 3rd	D
6	\flat 2nd	E

Fig. 4-10. Incidental tones with two occurrences.

- 1) The two statements of the 2nd on the low E string are concluding repeated tones at the cadence of 'Mean Old World', chorus 2. They are the 5th of the dominant chord.
- 2, 3, 4, 5) Those tones which occur on the A string and the D string are part of a whole tone scalar motive that does not occur elsewhere in the transcriptions. It is clearly, because of its complexity, a gesture that Walker has thought out and practised as a response to the underlying dominant harmony. It is executed with the left hand fingers in a 3 - 2 - 1 formation on consecutive strings at consecutive frets. The formation is then moved up twice in two fret intervals, and moved down similarly three times. The complete gamut of twelve tones forming a whole tone scale. The motive is shown below.
- 6) The two incidents of the \flat 2nd on the E string are incorporated in a riff figure in 'First Love Blues' (Bar 8:4), against the dominant chord. They are the quotation of the theme which occurs in 'Blues in the Night', at the arrival of the dominant chord in bar 9. This is echoed precisely by Walker at bar 9 of his improvisation.

Five tones occur only once each throughout the transcriptions. These are:

	Tone	String
1	\flat 2nd	G
2	6th	D
3	4th	A
4	5th	G
5	Inflected \flat 7th	B

Fig. 4-11. Incidental tones with one occurrence.

All five occur in 'Description Blues'.

- 1, 2, 3, and 4) The first four of these tones occur in the whole-tone motive described above.
- 5) The Inflected \flat 7th on the B string is in the pick-up bar of the same solo.

These five incidental tones all within the same improvisation suggest that the performer was experimenting with some new ideas during this recording session. The whole-tone motive can readily be isolated as a 'set piece' rehearsed gesture that has been inserted at the arrival of the dominant chord at bar 9.

4. 3. Left hand movement strategies.

Volume two fig. 88 presents twenty two recurrent movement patterns that occur in excess of twenty times that are derived the Walker transcriptions. The chart is subdivided as shown:

Diagram.	Number of gestures.
88. 1	More that 100
88. 2	70 - 100
88. 3	60 - 70
88. 4	50 - 60
88. 5	40 - 50
88. 6	30 - 40
88. 7	25 - 30
88. 8	20 - 25

Fig. 4-12. Left hand movement strategies.

There are twenty nine different gestures represented on the chart. These can be divided into nine sub-categories according to finger movement. The sub categories are presented hierarchically in the following table:

Left hand fingering.	Number of occurrences.
3 - 1	473
1 - 3	392
1 - 4	121
1 - 1	111
4 - 1	87
1 - 2	86
3 - 3	81
2 - 1	78
4 - 3	45
TOTAL	1,474

Fig. 4-13. Left hand finger movement.

The above table indicates that the two most common left hand gestures that are employed by Walker, by far, are a 3 - 1 pattern and its reverse a 1 - 3 pattern.

The 3 - 1 pattern occurs for 32% and the 1 - 3 pattern occurs 27% of the total output of prevalent movement patterns. Although executed in a different position, these two patterns also predominated in Johnson's prevalent movement strategies. Some of these movement strategies can be further sub-divided by the string sets that are employed.

4. 3. 1. The left hand 3 - 1 gesture.

The 3 - 1 gesture occurs on two different string sets in seven different contexts. It occurs as a two fret descent on the same string in the four following contexts:

4th - neutral 3rd	G string.	Gesture 2
6th - 5th	B string.	Gesture 9
2nd - root	E string.	Gesture 14
Inflected 4th - neutral 3rd	G string.	Gesture 25

Fig. 4-14. Left hand 3 - 1 movement, single string.

The first three of these are identical left hand movement strategies executed on each of the top three strings of the instrument.

The 3 - 1 gesture also occurs as an ascending melodic pattern between adjacent strings in three contexts:

Root - neutral 3rd	D - G string	Gesture 1
Inflected 4th - 5th	G - B string	Gesture 12
Inflected 6th - root,	B - E string	Gesture 19

Fig. 4-15. Left hand 3 - 1 movement, paired strings.

4.3.2. The left hand 1 - 3 gesture.

The 1 - 3 left hand gesture occurs on two different string sets in eight different contexts. It occurs as a two fret ascent on the same string:

Neutral 3rd - 4th	G string	Gesture 4
5th - 6th	B string	Gesture 17
Neutral 3rd - inflected 4th	G string	Gesture 18
Root - 2nd	E string	Gesture 20
5th - inflected 6th	B string	Gesture 21

Fig. 4-16. Left hand 1 - 3 movement, single string.

The first four of these are inversions of the 3 - 1 descending gestures shown above. The inversion of example 5, inflected 6th - 5th, does not occur as a prevalent movement.

The 1 - 3 fingering pattern also occurs in descending melodic patterns between adjacent strings in three contexts:

Neutral 3rd - root	G string to D string	Gesture 8
5th - 4th	B string to G string	Gesture 10
5th - Inflected 4th	B string to G string	Gesture 11

Fig. 4-17. Left hand 1 - 3 movement, paired strings.

4.3.3. The left hand 1 - 4 gesture.

The left hand gesture 1 - 4 occurs on two different string sets in three contexts. A descent on adjacent strings:

- Root - \flat 7th, E string to B string. Gesture 5

and as ascent pattern on the same string:

- 5th - \flat 7th on the B string. Gesture 27
- Root - \flat 3rd on the E string. Gesture 29

4.3.4. The left hand 1 - 1 gesture.

The left hand 1 - 1 gesture occurs in two contexts on adjacent B and E strings in ascent and descent patterns.

- 5th - root, B string to E string. Gesture 7
- Root - 5th, E string to B string. Gesture 15

This represents a different type of left hand gesture from those above in that a left hand finger, three or four, is not used to alternate with finger one. Instead the first finger is laid flat on the top two strings in order to successively articulate two tones that are situated at the same fret.

4. 3. 5. The left hand 4 - 1 gesture.

The left hand gesture 4 - 1 occurs on two different string sets in three contexts: As descent patterns on the same string,

- ♭7th - 5th on the B string. Gesture 16
- ♭3rd - Root on the E string. Gesture 26

and an ascent on adjacent strings,

- ♭7th - Root , B string to E string. Gesture 28

These three gestures are a reversal of the 1 - 4 gestures shown above.

4. 3. 6. The left hand 1 - 2 gesture.

The left hand gesture 1 - 2 occurs in a single context; a one fret ascent on the G string, a #2 - 3 resolution, which is the third most common gesture on volume two fig. 88. This is a major division of the fingering structures almost all occurrences of which are against the tonic chord.

4. 3. 7. The left hand 3 - 3 gesture.

The left hand gesture 3 - 3 occurs on two different string sets in three contexts.

- Inflected 4th - 4th on the G string. Gesture 22

In this gesture the string is inflected by the third finger of the left hand and the string is articulated with the plectrum. The inflection of the string is then released and the same fret location re-articulated.

The gesture also occurs as a descent across adjacent strings:

- 4th - root, G string to D string. Gesture 23
- Inflected 4th - root, G string to D string. Gesture 24

In this type of gesture the third finger is used to produce a tone on the G string and then the same finger is moved, in a rolling motion, across on to the consecutive D string.

4. 3. 8. The left hand 2 - 1 gesture.

The left hand gesture 2 - 1 occurs in only one context, as an ascent from the 3rd to the 5th on adjacent G and B strings, as shown as gesture 6.

4. 3. 9. The left hand 4 - 3 gesture.

The left hand gesture 4 - 3 occurs in only one context as a descent between the 7th and 6th on the B string, as shown as gesture 13.

A comparison can be made between Walker's fingering components and those of Johnson in chapter 3. 3. It was seen that Johnson's most persistent fingering strategies were the same as those described by Bailey in relation to the *dutar*. (1985: 255). Left hand finger sequences 1 - 3 and 3 - 1 are, by far, the commonest employed by both Walker and Johnson. In Johnson movement between these two digits constitutes 56% of his fingering strategies; the same moves in Walker represent 58%. Other gestures are considerably less frequently employed by both performers. Left hand gestures that are unique to Johnson, in this analysis, are left hand sequences between fingers three and two. Walker employs a left hand 1 - 1 side slipping motion that is not found in the Johnson transcriptions.

Because of the tuning of the guitar the employment of the same gestures at different locations results in the creation of different melodic material.

4. 4. Gestural analysis.

Seven groups of recurrent characteristic melodic phrase types were identified in Johnson's performance at chapter 3. 4. Unlike Johnson, Walker makes infrequent use of arpeggio based harmonic motives in response to the underlying IV and V chords of the model. Those that he does use throughout the transcriptions are examined below. There are only three classifications of isolated melodic phrase types here: harmonic motives, the riff and repeated tones.

4. 4. 1. Harmonic motives.

It is less typical for Walker to acknowledge the arrival of the sub-dominant chord than Johnson. In the latter's performance a number of specific sub-dominant motives were isolated including the *x* group of motives. Walker plays only one sub-dominant motive in the transcriptions, a repeated phrase in 'Stormy Monday' beginning with an anticipation at bar 4:4. In this motive the performer has uncharacteristically shifted from the position where the E shape functions as a tonic chord to where the E shape functions as a sub-dominant chord. The motive lasts for the full two bars of the prevailing IV chord. On the diagram the root note markers, white circles representing the root notes of the sub-dominant chord, reveal the underlying E shape. The motive has been sub-divided into two separate component parts which outline a sub-dominant arpeggio incorporating a flattened 7th tone.

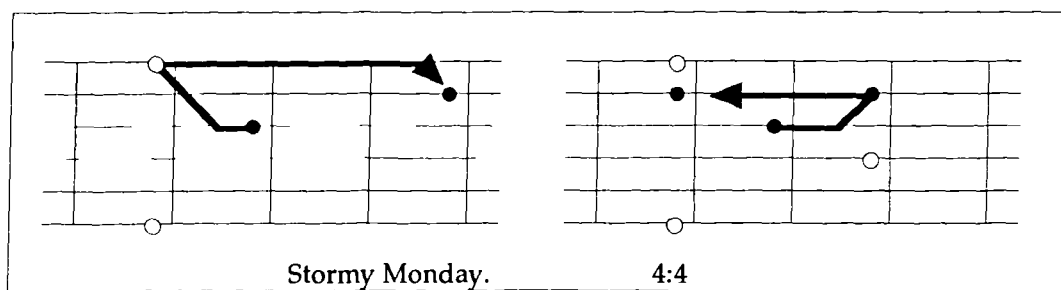
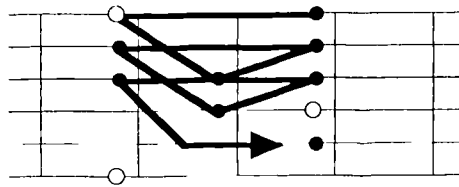


Fig. 4-18. Sub-dominant motive.

In Walker's transcriptions the two dominant chord motives, occurring at bar nine of the model, are in 'T-Bone Jumps Again' chorus 2, and 'Description Blues'. This is a contrast to Johnson who uses a distinctive set of dominant motives in over half of the transcriptions under analysis, and this is perhaps an indication that there is little cross-influence between the fingering patterns employed by the two performers.

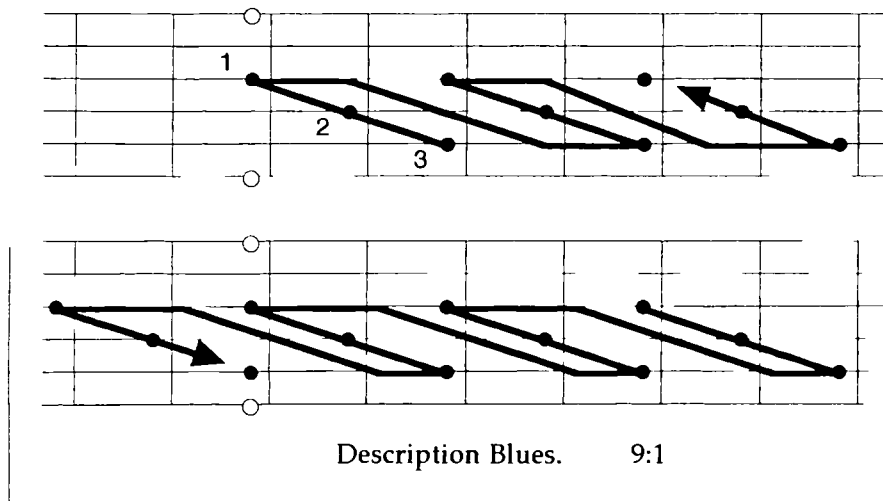
Both of the dominant chord motives in Walker's solos are distinctive patterns whereby a 'geometric' shape, formed by a left hand finger sequence, is repeated. In the first from 'T-Bone Jumps Again', chorus 2, (fig. 4-19) a triangular form is repeated three times in a descending pattern across the strings. In the final statement the fingering pattern is varied in order to terminate on the dominant note. The sequence of tones produced against the dominant chord, 5th - 4th - 6th - 2nd - root - 3rd - 7th - \flat 5th - root, are a result of the repeated three component fingering pattern.



T-Bone Jumps Again, chorus 2. 9:1

Fig. 4-19. Dominant motive a.

In the second example (fig. 4-20), from 'Description Blues', an augmented triad ascends three times then descends four times, again employing a three component repeated fingering pattern, in a whole tone passage.



Description Blues. 9:1

Fig. 4-20. Dominant motive b.

4. 4. 2. The riff

The riff, although a common device in Walker's improvisations, is not as pervasive as was seen in Johnson's solos. In Johnson's transcriptions eighteen different types of riff occurred some of which are recurrent throughout the transcriptions and some of which have as many as eight consecutive repetitions. In Walker's performance practice riffs, which commonly only have two repetitions, frequently occur at the chord change to the sub-dominant of bar 5.

4. 4. 3. Repeated tones

Nine of the twenty three solos open with a repeated tone and they are evenly distributed throughout the model. The repeated tones that occur in Walker's transcriptions are:

Tone	String	Number of Repetitions
Inflected 4th	G	x4, x5, x5, x3, x4, x3, x4, x4, x3, x5
Root	E	x3, x4, x3, x3, x5
Neutral 3rd	E	x10, x14, x5, x15
b7th	B	x4
Root	D	x3
6th	B	x3
5th	B	x3

Fig. 4-21. Repeated tones.

From this chart it can be seen that the three most frequently repeated tones are the inflected 4th, the root and the neutral 3rd. The inflected 4th and the neutral 3rd are blue notes and their emphatic repetition is a device employed by Walker for creating tension.

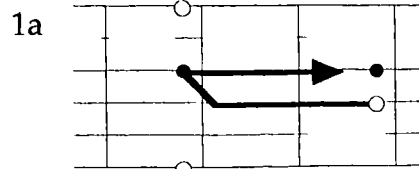
4. 5. Larger Cells

As in the Johnson analysis the next process in the analytical procedure is to examine the gestures as cells. All of the cells labelled 1 begin with the most common gesture 1 (from volume two fig 88); a movement from the root note on the D string to the neutral 3rd on the G string.

4. 5. 1. Cells 1a - f

Cells 1a, 1c, 1d and 1f all have related left hand fingering strategies. They all comprise a toggle motion of the left hand fingers 3 - 1 - 3 at a two fret distance. Cell 1a (fig. 4 22) begins on the root note and ascends to the 4th via the neutral 3rd.

Strings used: D/G
 Tones used: Root, b3rd, 4th
 Gestures used: 1 and 4



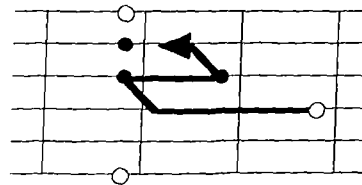
I Got a Break Baby, chorus 1	5:3 [riff x4], 6:3
Mean Old World, chorus 1	5:2 [riff x3]
T-Bone Jumps Again, chorus 1	5:2, 6:2
T-Bone Jumps Again, chorus 2	5:2, 6:4
Stormy Monday.	10:4
Description Blues.	2:4, 4:3, 5:2, 6:2
T-Bone Shuffle, chorus 1.	4:4, 5:3
Wise Man Blues.	4:2, 5:3, 6:3
You're My Best Poker Hand, chorus 1.	4:4, 5:2
You're My Best Poker Hand, chorus 2.	5:2
First Love Blues.	1:2, 3:1, 4:2, 5:2
Too Much Trouble Blues, chorus 2.	4:2, 5:4, 6:2, 7:4
Hypin' Woman Blues, chorus 1.	5:1, 6:1
On Your Way Blues.	5:4, 7:1
She's My Old Time Used To Be, solo 1.	5:1, 5:3, 6:1
She's My Old Time Used To Be, solo 1.	1:3, 2:3
	42 Occurrences

Fig. 4-22. Cell 1a.

Cell 1b (fig. 4-23) outlines a major arpeggio but with the 3rd degree being approached from the #2nd a semi-tone below. The left hand fingering sequence alternates between the first finger and the second and third fingers: 3 - 1 - 2 - 1.

Strings used: D/G
 Tones used: Root, #2nd, 3rd
 Gestures used: 1 and 3

1b

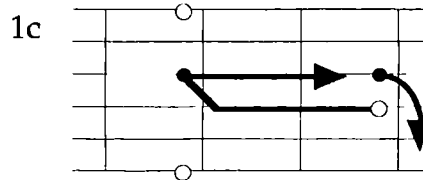


I Got a Break Baby, chorus 1.	3:3, 7:1
I Got a Break Baby, chorus 2.	11:1
Mean Old World, chorus 1.	11:1
Mean Old World, chorus 2.	8:3, 11:1, 12:1
Bobby Sox Blues.	8:1, 11:1, 12:1
T-Bone Jumps Again, chorus 1.	8:1, 11:1
T-Bone Jumps Again, chorus 2.	11:1
Stormy Monday.	4:1, 11:1, 12:1
Description Blues.	11:1, 12:1
T-Bone Shuffle, chorus 1.	11:1
T-Bone Shuffle, chorus 2.	11:1
Wise Man Blues.	11:1, 12:1
You're My Best Poker Hand, chorus 1.	11:1
You're My Best Poker Hand, chorus 2.	11:1
First Love Blues.	3:3, 7:1, 11:1, 12:1
Hypin' Woman Blues, chorus 1.	11:1
Hypin' Woman Blues, chorus 2.	11:1
Too Much Trouble Blues, chorus 1.	11:1
Too Much Trouble Blues, chorus 2.	11:1
Too Much Trouble Blues, chorus 3.	7:1
On Your Way Blues.	4:1, 11:1, 12:1
She's My Old Time Used To Be, solo 1.	3:1, 4:2, 11:1, 12:1
She's My Old Time Used To Be, solo 2.	6:2, 11:1, 12:1
	43 Occurrences

Fig. 4-23. Cell 1b.

1c (fig. 4-24) is the same 3 - 1 - 3 motion as cell 1a but concludes with an inflection of the 4th degree.

Strings used: D/G
 Tones used: Root, #2nd,
 inflected 4th
 Gestures used: 1 and 18

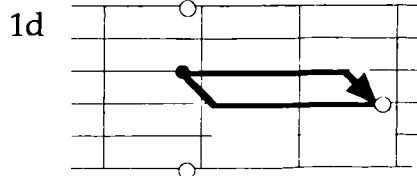


I Got a Break Baby, chorus 1.	6:2
I Got a Break Baby, chorus 2.	4:4
Mean Old World, chorus 1.	3:2
Mean Old World, chorus 2.	4:4, 6:2
Bobby Sox Blues.	5:2, 7:2
Stormy Monday.	p.u, 2:2, 3:2
Description Blues.	2:1, 2:2
T-Bone Shuffle, chorus 1.	5:2
T-Bone Shuffle, chorus 2.	6:3
Wise Man Blues.	1:4
First Love Blues.	p.u, 2:2,
Too Much Trouble Blues, chorus 1.	5:3
Too Much Trouble Blues, chorus 2.	5:1, 7:1
Hypin' Woman Blues, chorus 2	5:1[riff x4]
On your Way Blues.	3:1
She's My Old Time Used To Be, solo 1.	6:2
She's My Old Time Used To Be, solo 2.	1:2, 2:2
	28 occurrences

Fig. 4-24. Cell 1c.

1d (fig. 4-25) is a circular pattern that ascends from the root to the neutral 3rd, and returns to the root.

Strings used: D/G
 Tones used: Root, #2nd.
 Gestures used: 1 and 7



I Got a Break Baby, chorus 1	3:2, 10:4
I Got a Break Baby, chorus 2	10:4
Mean Old World, chorus 1.	4:1
Bobby Sox Blues.	7:4, 12:1
Stormy Monday.	3:4, 11:4
Description Blues.	6:4, 11:4
Wise Man Blues.	11:4
First Love Blues.	10:4, 11:4
On Your Way Blues.	3:4, 10:4
	15 Occurrences

Fig. 4-25. Cell 1d.

Cell 1e (fig. 4-26) is accomplished with a left hand 3 - 1 - 1 gesture. After articulating the fist tone the performer lays his first finger flat on the G and B strings for the two ensuing notes.

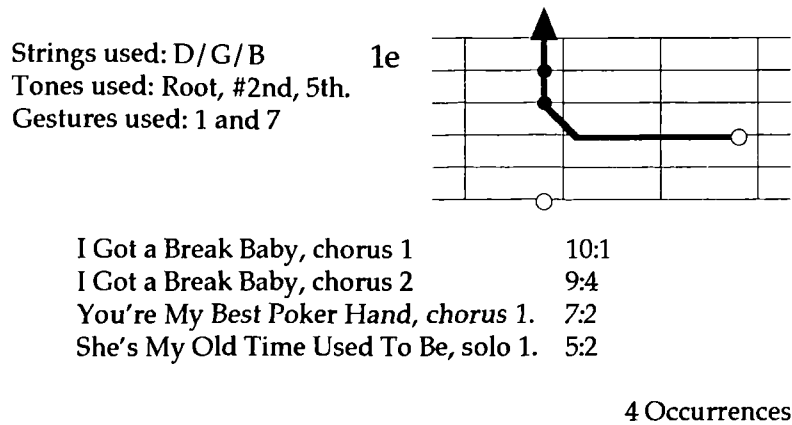


Fig. 4-26. Cell 1e.

In cell 1f (fig. 4-27), which is related to cell 1d, the performer skips a string to the final note; the 5th on the D string.

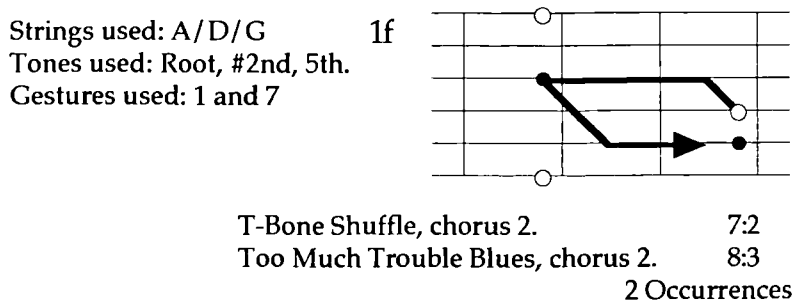


Fig. 4-27. Cell 1f.

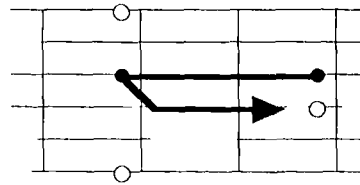
4. 5. 2. Cells 2a - f.

The cells 2a - f comprise two to four tones beginning with the second most common gesture; a descent from the 4th to the neutral 3rd.

Cell 2a (fig. 4-28), an inversion of cell 1a, is a descent from the 4th to the root note via the neutral third and is executed with the same left hand fingering sequence: 3 - 1 - 3.

Strings used: D, G
 Tones used: 4th, neutral 3rd, root.
 Gestures used: 2 and 8

2a

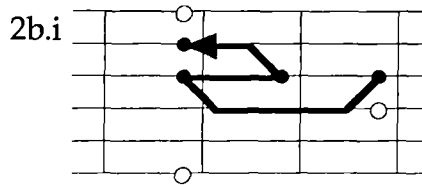


I Got a Break Baby, chorus 1.	1:2, 2:3, 5:2, 6:4,
I Got a Break Baby, chorus 2.	10:2
Mean Old World, chorus 1.	2:4, 3:3, 5:1, 10:4
Mean Old World, chorus 2.	10:4
Bobby Sox Blues.	7:1, 10:4
T-Bone Jumps Again, chorus 1.	6:3
T-Bone Jumps Again, chorus 2.	10:4
Stormy Monday.	1:4, 3:1, 10:4
Description Blues.	4:2, 5:2, 6:2
T-Bone Shuffle, chorus 2.	5:4, 10:3
Wise Man Blues.	5:2, 6:2, 10:4
You're My Best Poker Hand, chorus 1.	4:3, 7:1, 10:4
First Love Blues.	1:4, 4:3, 5:2, 6:4
Too Much Trouble Blues, chorus 1.	7:4, 10:4
Too Much Trouble Blues, chorus 2.	4:1, 6:1, 8:1, 11:4
Too Much Trouble Blues, chorus 2.	6:4
Hypin' Woman Blues, chorus 2.	4:2
On Your Way Blues.	2:4, 5:4, 11:4
She's My Old Time Used To Be, solo 1.	3:4
She's My Old Time Used To Be, solo 2.	5:2, 6:2
	46 Occurrences

Fig. 4-28. Cell 2a.

Three related cells, labelled 2b.i (fig. 4-29), 2b.ii (fig. 4-30) and 2b.iii (fig. 4-31), begin with gesture 2 and are continued with gesture 3, the #2nd - 3rd resolution. Each of the three cells terminates on a different tone. 2b.i, the most common of the three cells, ends on the 5th on the B string and is executed with a 3 - 1 - 2 - 1 left hand motion; 2b.ii ends on the root on the D string and is executed with a 1 - 3 - 1 - 2 - 3 motion. The 5th on the A string acts as a point of repose in place of the more usual tonic note in 2b.iii.

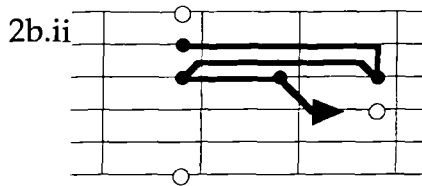
String used: G, B
 Tones used: 4th, # 2nd, 3rd 5th.
 Gestures used: 2 and 3



I Got a Break Baby, chorus 1.	4:2, 7:3, 11:3
I Got a Break Baby, chorus 2.	7:2, 8:2, 11:3
Mean Old World, chorus 1.	6:2, 7:1, 11:3
Mean Old World, chorus 2.	9:2
Stormy Monday.	8:2
T-Bone Shuffle, chorus 1.	2:4, 11:4
Wise Man Blues.	7:1
You're My Best Poker Hand, chorus 1.	2:3, 3:1
You're My Best Poker Hand, chorus 2.	7:4
First Love Blues.	7:3
Too Much Trouble Blues, chorus 1.	2:2, 11:4
Too Much Trouble Blues, chorus 3.	10:3
Hypin' Woman Blues, chorus 2.	7:4, 10:2
She's My Old Time Used To Be, solo 1.	7:2
She's My Old Time Used To Be, solo 2.	4:3, 7:4, 11:4
	27 Occurrences

Fig. 4-29. Cell 2b.i.

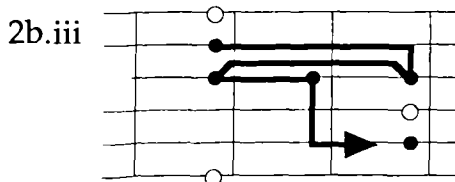
String used: D, G, B
 Tones used: 5th, 4th, # 2nd, 3rd.
 Gestures used: 2 and 3



Mean Old World, chorus 2.	11:4
T-Bone Jumps Again, chorus 1.	10:4
T-Bone Shuffle, chorus 1.	10:4
You're My Best Poker Hand, chorus 2.	10:4
Too Much Trouble Blues, chorus 2.	10:4
Hypin' Woman Blues, chorus 1.	10:4
She's My Old Time Used To Be, solo 1.	11:4
She's My Old Time Used To Be, solo 2.	10:4
	8 occurrences

Fig. 4-30. Cell 2b.ii.

String used: A, D, G, B
 Tones used: 5th, 4th, # 2nd, 3rd.
 Gestures used: 2 and 3

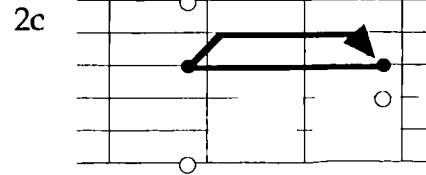


First Love Blues. 8:1

Fig. 4-31. Cell 2b.iii.

Other cells that share the same 3 - 1 - 3 left hand sequence as cell 2a are 2c (fig. 4-32) which is performed on the one string with the final tone being the same as the first tone; 2e (fig. 4-34) in which the final tone is inflected; and 2d (fig. 4-33) in which the performer skips a string to the final tone on the A string.

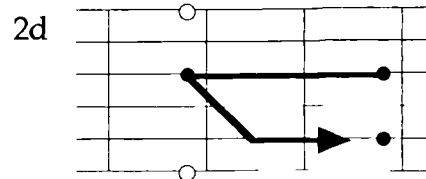
String used: G
 Tones used: 4th, # 2nd.
 Gestures used: 2 and 4



Bobby Sox Blues.	10:3
Stormy Monday.	10:2, 10:3
Description Blues.	8:1
T-Bone Shuffle, chorus 2.	7:1, 10:2
Wise Man Blues.	1:1, 2:1
First Love Blues.	6:3, 11:3
On Your Way Blues.	7:3
She's My Old Time Used To Be, solo 1.	8:2 [x2]
	13 Occurrences

Fig. 4-32. Cell 2c.

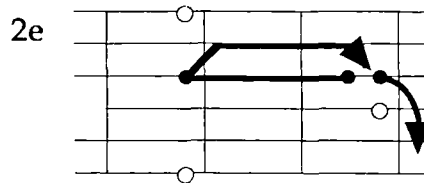
Strings used: A, D, G
 Tones used: 4th, neutral 3rd, 5th.
 Gestures used: 2 and 4



I Got a Break Baby, chorus 1.	10:3
T-Bone Jumps Again, chorus 1.	7:1
Stormy Monday.	7:2
Description Blues.	p.u, 6:3
T-Bone Shuffle, chorus 1.	8:2
First Love Blues.	3:1, 10:3
Hypin Woman Blues, chorus 1.	7:2
	9 Occurrences

Fig. 4-33. Cell 2d.

String used: G
 Tones used: 4th, neutral 3rd,
 inflected 4th.
 Gestures used: 2 and 18

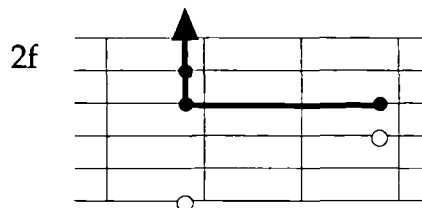


I Got a Break Baby, chorus 1.	5:2
T-Bone Jumps Again, chorus 1.	2:4
T-Bone Jumps Again, chorus 2.	9:4
Description Blues.	2:4
T-Bone Shuffle, chorus 1.	1:2
Wise Man Blues.	2:1
You're My Best Poker Hand, chorus 1.	5:3
She's My Old Time Used To Be, solo 1.	5:3, 8:3
	9 Occurrences

Fig. 4-34. Cell 2e.

One final cell that opens with gesture 2 is cell 2f (fig. 4-35) which replicates the left hand 3 - 1 - 1 gesture of cell 1e (fig. 4-26).

String used: G/B
 Tones used: 4th, neutral 3rd, 5th.
 Gestures used: 2



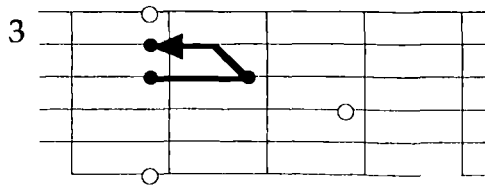
She's My Old Time Used To Be, solo 1. 5:2

Fig. 4-35. Cell 2f.

4.5.3. Cell 3.

Cell 3 (fig. 4-36) contains the #2nd - 3rd resolution (gesture 3) and is executed with a 1 - 2 - 1 left hand motion.

Strings used: G, B
 Tones used: #2nd, 3rd, 5th.
 Gestures used: 3 and 6



Stormy Monday.	7:4
Description Blues.	7:2
You're My Best Poker, chorus 1.	1:2, 2:2
You're My Best Poker, chorus 2.	6:2
Too Much Trouble, chorus 1.	6:1

6 Occurrences

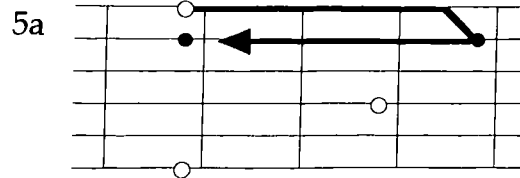
Fig. 4-36. Cell 3.

This gesture is frequently preceded by gesture 1 (as in cell 1b), or gesture 2 (as in 2bi - 2biii). There are also six occurrences that open with cell 3.

4. 5. 4. Cells 5a - c.

The three cells 5a, b and c, move from the root note on the E string to the $\flat 7$ th on the B string. Cell 5a (figure 12. 19), a hairpin gesture, continues the descent down to the 5th on the B string, and is accomplished with a 1 - 4 - 1 left hand sequence.

Strings used: B, E
 Tones used: root, b7th, 5th
 Gestures used: 5 and 16



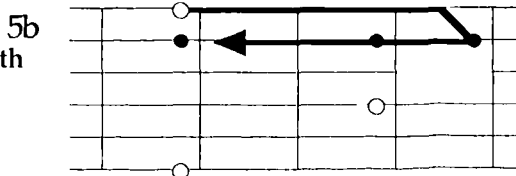
I Got a Break Baby, chorus 1.	2:2, 4:1
I Got a Break Baby, chorus 2.	11:2, 12:1
Mean Old World, chorus 1.	11:3, 12:1
Mean Old World, chorus 2.	10:2, 11:2
Bobby Sox Blues.	5:3, 6:3, 8:2, 11:2
T-Bone Jumps Again, chorus 1.	4:2, 4:4
Stormy Monday.	2:3, 7:1, 11:2
Description Blues.	7:3, 11:2
T-Bone Shuffle, chorus 1.	4:1
T-Bone Shuffle, chorus 2.	11:2
Wise Man Blues.	10:2, 11:2
You're My Best Poker Hand, chorus 1.	4:1
First Love Blues.	7:2, 11:3
Too Much Trouble Blues, chorus 1.	6:2, 6:4
Too Much Trouble Blues, chorus 3.	5:3
Hypin' Woman Blues, chorus 1.	4:1, 4:3, 9:1
Hypin' Woman Blues, chorus 2.	3:1
On Your Way Blues.	4:1, 11:2
She's My Old Time Used To Be, solo 1.	p.u, 11:2
She's My Old Time Used To Be, solo 2.	3:2

39 Occurrences

Fig. 4-37. Cell 5a.

Cell 5b is the same linear descent but includes the 6th degree as a passing note accomplished with a 1 - 4 - 3 - 1 fingering. The 6th is often contained in gestures that descend between the root on the E string and 5th degree on the B string. In 5b the tone is contained in the descending line Root - b7th - 6th - 5th.

Strings used: B, E
 Tones used: root, b7th, 6th, 5th
 Gestures used: 5, 9 and 13



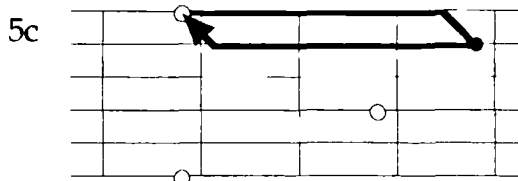
I Got a Break Baby, chorus 1.	12:1
I Got a Break Baby, chorus 2.	8:1
Mean Old World, chorus 1.	4:3, 6:3
Mean Old World, chorus 2.	9:1
T-Bone Jumps Again, chorus 1.	8:3, 9:1
T-Bone Jumps Again, chorus 2.	7:4
Description Blues.	4:1
T-Bone Shuffle, chorus 1.	7:4
Wise Man Blues.	8:2, 8:3
You're My Best Poker Hand, chorus 1.	9:1
You're My Best Poker Hand, chorus 2.	4:3, 6:2, 7:2
First Love Blues.	2:4, 3:4
Too Much Trouble Blues, chorus 1.	1:1, 9:4
Too Much Trouble Blues, chorus 2.	3:3, 9:3
On Your Way Blues.	2:3, 6:4
She's My Old time Used To Be, solo 1.	2:1, 2:2, 3:2, 3:3, 4:3, 6:3, 7:1, 10:2
She's My Old Time Used To Be, solo 2.	4:2, 7:2, 7:3, 11:2

35 Occurrences

Fig. 4-38. Cell 5b.

Cell 5c (fig. 4-39) is a circular motion between the root and the b7th, performed with a left hand 1 - 4 - 1 toggle action.

Strings used: B/E
 Tones used: root, b7th
 Gestures used: 5 and 26



Bobby Sox Blues.	12:2
Stormy Monday.	6:4, 12:3
Description Blues	12:2
Wise Man Blues.	12:2
First Love Blues.	12:2

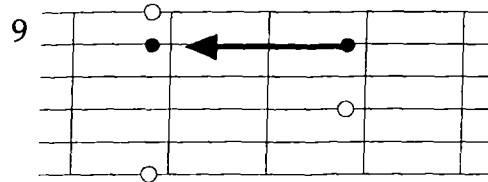
6 Occurrences

Fig. 4-39. Cell 5c.

4.5.5. Cells 9a - h.

All of the motives here begin with gesture 9 (fig. 4-40) a linear 6th - 5th descent on the B string.

String used: B
Tones used: 6th, 5th
Gesture used: 9

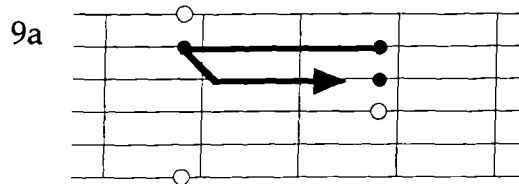


Mean Old World, chorus 1. 8:2

Fig. 4-40. Gesture 9.

The cells labelled 9 either continue on the same string by returning to the 6th on the B string, 9c and 9g ; shift to the lower adjacent G string 9a and 9e; or shift to the higher adjacent E string, 9d. 5 cells in this group; 9a, 9c, 9d, 9e, and 9g, are related in that they comprise the same left hand fingering component: 3 - 1 - 3.

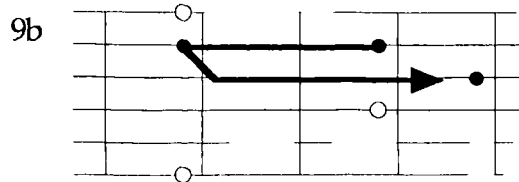
Strings used: B/G
Tones used: 6th, 5th, 4th
Gestures used: 9 and 10



I Got a Break Baby, chorus 1.	5:1
Mean Old World, chorus 1.	5:1
Description Blues.	4:4, 6:1, 8:1
Wise Man Blues.	5:2, 6:2
You're My Best Poker Hand, chorus 2.	7:4
On Your Way Blues.	4:4
First Love Blues.	5:1, 8:1
Too Much Trouble Blues, chorus 1.	2:1
Too Much Trouble Blues, chorus 3.	10:2
She's My Old Time Used To Be, solo 2.	4:2, 5:1, 6:1, 7:3
	17 occurrences

Fig. 4-41. Cell 9a.

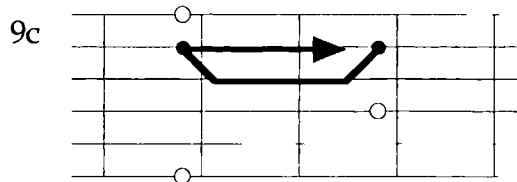
Strings used: B/G
 Tones used: 6th, 5th, b5th
 Gestures used: 9 and 25



I Got a Break Baby, chorus 1.	7:2
I Got a Break Baby, chorus 2.	8:2
Mean Old World, chorus 1.	6:4
Mean Old World, chorus 2.	9:2
Description Blues.	4:2
T-Bone Shuffle, chorus 1.	8:1
Frist Love Blues.	4:2
Too Much Trouble Blues, chorus 2.	3:4
She's My Old Time Used To Be, solo 1.	3:3, 7:1
	10 occurrences

Fig. 4-42. Cell 9b.

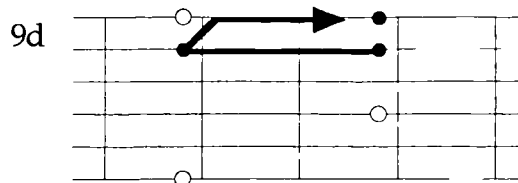
String used: B
 Tones used: 6th, 5th
 Gestures used: 9 and 17



I Got a Break Baby, chorus 1.	8:2
Mean Old World, chorus 1.	4:4
On Your Way Blues.	4:4, 5:2

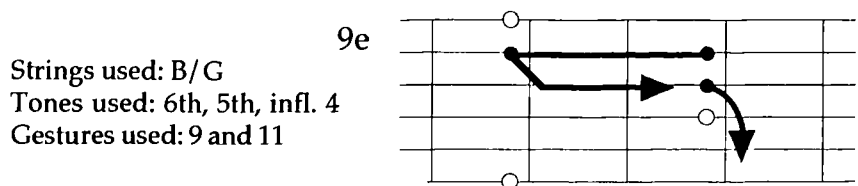
Fig. 4-43. Cell 9c.

Strings used: B/E
 Tones used: 6th, 5th, 2nd
 Gesture used: 9



T-Bone Jumps Again, chorus 1.	8:4
T-Bone Jumps Again, chorus 2.	8:1
Wise Man Blues.	8:2
You're My Best Poker Hand, chorus 1.	9:3
You're My Best Poker Hand, chorus 2.	6:3
Frist Love Blues.	4:1
She's My Old Time Used To Be, solo 1.	2:2, 3:2, 4:3, 8:3
She's My Old Time Used To Be, solo 2.	7:2
	11 occurrences

Fig. 4-44. Cell 9d.



T-Bone Jumps Again, chorus 1.	9:2
You're My Best Poker Hand, chorus 1.	10:1
You're My Best Poker Hand, chorus 2.	4:4
First Love Blues.	2:4
Too Much Trouble Blues, chorus 1.	10:1
Too Much Trouble Blues, chorus 2.	9:4
On Your Way Blues.	2:3, 6:4
She's My Old Time Used To Be, solo 1.	2:3, 10:3
	10 occurrences

Fig. 4-45. Cell 9e.

The final tone of example 9b is the 5th on the G string, the cell being performed with a 3 - 1 - 4 motion.

The two cells 9f and 9h are related; after the opening gesture the cells are completed with a side-stepping motion of the first finger across the strings at the same fret. 9f ascends on adjacent strings and 9h descends across adjacent strings. The fingering sequence in both cases is 3 - 1 - 1.

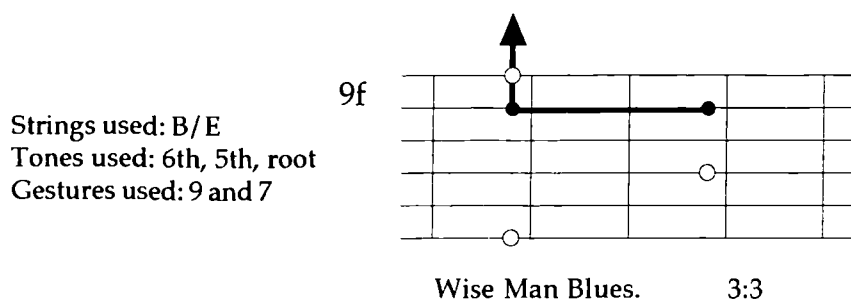


Fig. 4-46. Cell 9f.

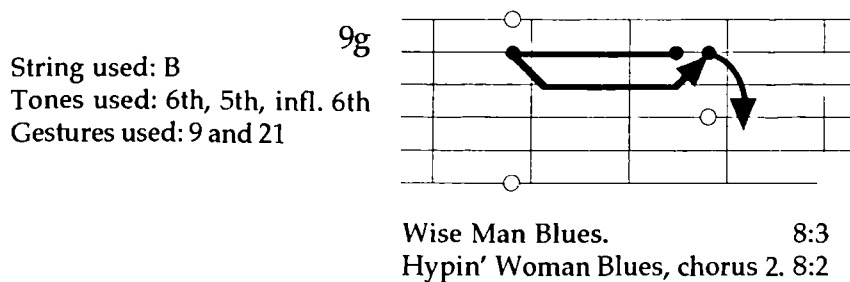


Fig. 4-47. Cell 9g.

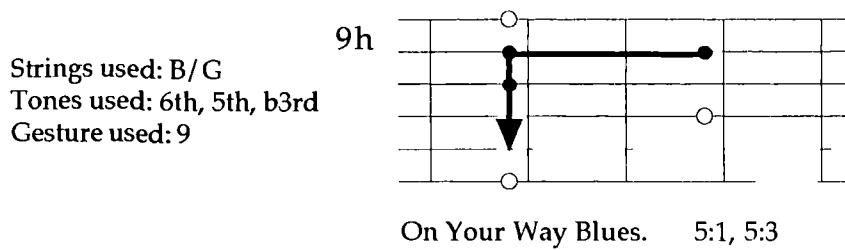
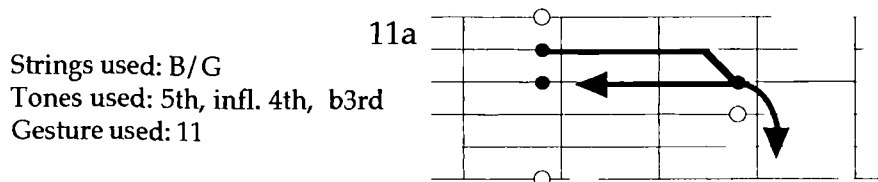


Fig. 4-48. Cell 9h.

4. 5. 6. Cells 11 a - c.

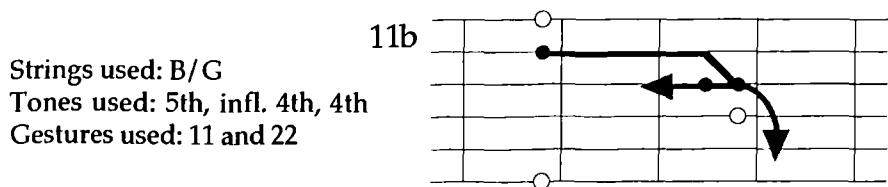
Three cells open with a descent from the 5th on the B string via the inflected 4th on the G string. 11a (fig. 4-49) descends to the neutral 4th with a 1 - 3 - 1 motion.



Bobby Sox Blues.	11:3
T-Bone Jumps Again, chorus 1.	1:1
Stormy Monday.	11:3
Description Blues.	11:3
Wise Man Blues.	11:3
You're My Best Poker Hand, chorus 1.	10:2
Too Much Trouble Blues, chorus 1.	4:4, 7:1, 10:1
Too Much Trouble Blues, chorus 3.	5:4
On Your Way Blues.	10:3, 11:3
She's My Old Time Used To Be, solo 1.	10:3
	12 occurrences

Fig. 4-49. Cell 11a.

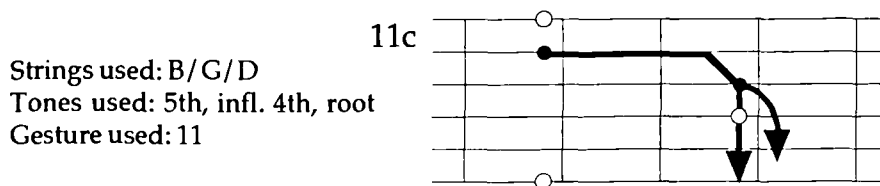
In cell 11b (fig. 4-50) the inflected string is released and the string re-articulated. The cell is accomplished with a left hand 1 - 3 motion.



I Got a Break Baby, chorus 1.	2:2, 9:3
Bobby Sox Blues.	6:4
Stormy Monday.	3:1, 7:1
T-Bone Shuffle, chorus 1.	9:4
First Love Blues.	9:4
Too Much Trouble Blues, chorus 3.	4:1
She's My Old Time Used To Be, solo 1.	7:4, 11:3
	11 occurrences

Fig. 4-50. Cell 11b.

The same left hand motion is employed in 11c but here, just after the inflection of the G string, the third finger rolls across on to the adjacent D string to produce the root note at the same fret location.



Mean Old World, chorus 1.	9:2
T-Bone Jumps Again, chorus 1.	5:1
T-Bone Shuffle, chorus 1.	4:3
You're My Best Poker Hand, chorus 2.	4:4
Hypin Woman Blues, chorus 1.	4:4
She's My Old Time Used To Be, solo 2.	1:4
	6 occurrences

Fig. 4-51. Cell 11c.

4.5.7. Cells 12a - d.

Gesture 12 (fig. 4-52) is used by Walker as a self contained cell in repeated riff figures in 'I Got a Break Baby' chorus 2, and 'Hypin' Woman Blues' chorus 1. It is executed with a 3 - 1 left hand motion.

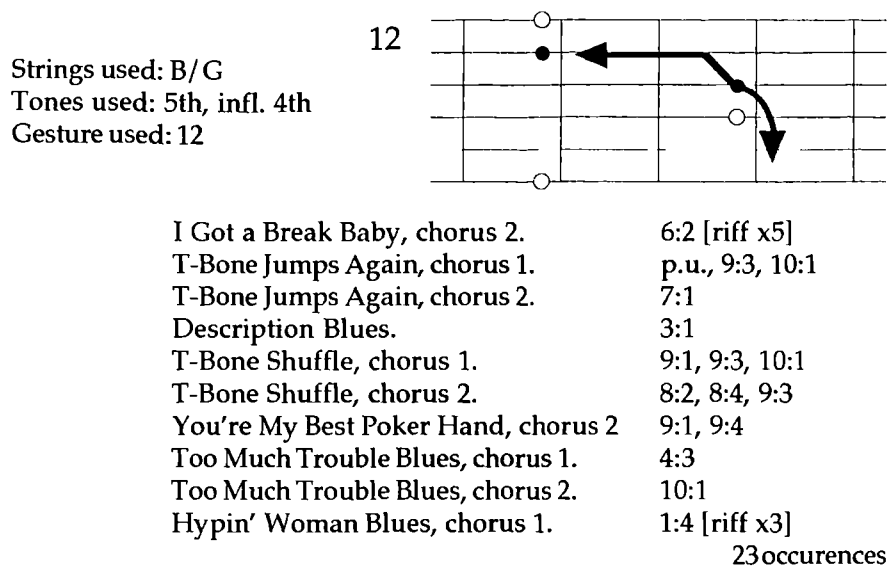


Fig. 4-52. Cell 12.

The same gesture is followed by gesture 7, the side-stepping first finger ascent across adjacent B and E strings, to form cell 12a (fig.4-53). This cell is accomplished with a 3 - 1 - 1 motion.

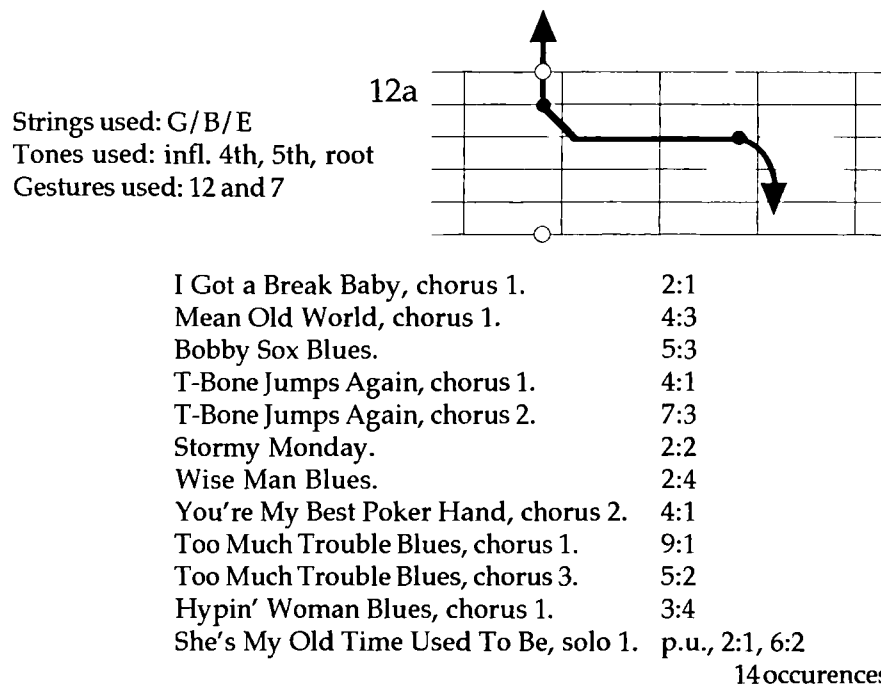
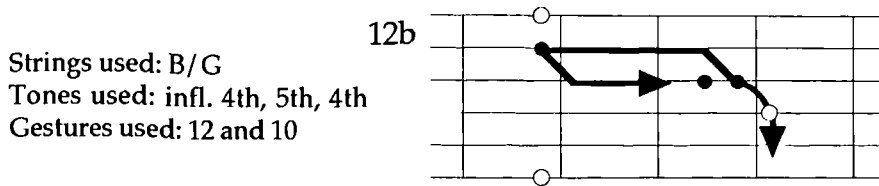


Fig. 4-53. Cell 12a.

In cell 12b (fig. 4-54), accomplished with a 1 - 3 - 1 left hand motion, the performer ends at the same fret location as the opening tone, but with the inflection released.



I Got a Break Baby, chorus 1	1:1
Mean Old World, chorus 2.	10:3
T-Bone Jumps Again, chorus 1.	10:3
Stormy Monday.	8:2
T-Bone Shuffle, chorus 1.	2:3, 10:2
You're My Best Poker Hand, chorus 2	10:2
First Love Blues.	6:2
Too Much Trouble Blues, chorus 2.	10:3
On Your Way Blues.	7:3
She's My Old Time Used To Be, solo 1.	2:3
	11 occurrences

Fig. 4-54. Cell 12b.

In cell 12c (fig. 4-55), a reverse gesture to 12a, a descent from the third on the B string to the flattened third on the G string is formed by a 3 - 1 - 1 motion.

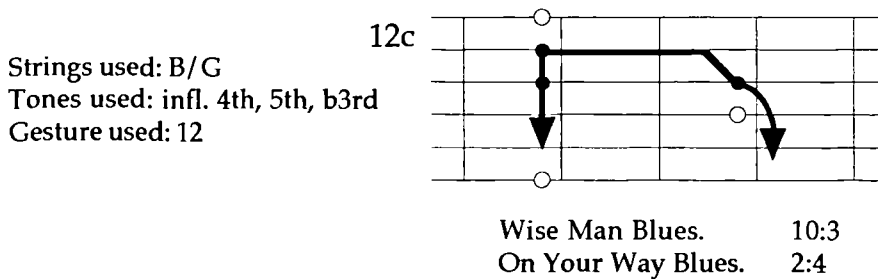


Fig. 4-55. Cell 12c.

Cell 12d (fig. 4-56) is an ascending figure from the inflected 4th to the flattened 7th degree via the 5th accomplished with a 3 - 1 - 4 left hand sequence.

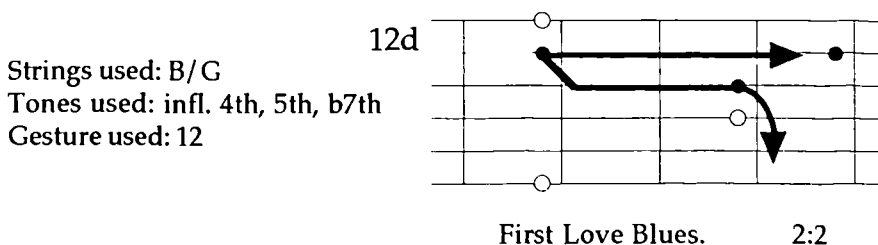


Fig. 4-56. Cell 12d.

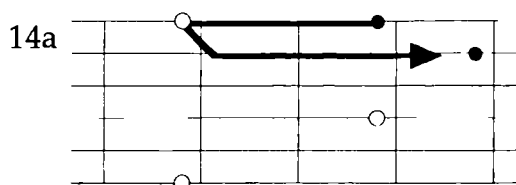
4. 5. 8. Cells 14a - f.

The commonest progression from the 2nd degree on the E string, shown in cells 14a - f, is a descent by two fret step to the root note on the same string.

Cells 14a and 14c have a related 3 - 1 - 4 fingering but use different string sets. 14a (fig. 4-57) descends to the flattened 7th on the B string, whereas 14c (fig. 4-59) ascends to the flattened 3rd and is contained on the one string.

Cell 14b (fig. 4-58) features a descent to the B string with the side-stepping motion of the first finger between the E and B strings in a 2 - 1 gesture.

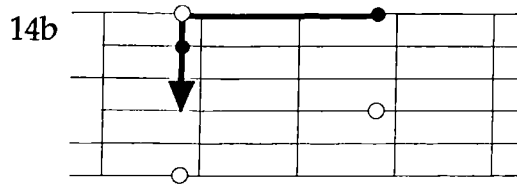
Strings used: B/E
Tones used: 2nd, root, b7th
Gestures used: 14 and 5



Bobby Sox Blues.	6:3
T-Bone Jumps Again, chorus 1.	4:4, 9:1
T-Bone Shuffle, chorus 1.	3:4, 7:3
Wise Man Blues.	8:3
You're My Best Poker Hand, chorus 1.	9:4
Too Much Trouble Blues, chorus 1.	6:4, 9:3
Too Much Trouble Blues, chorus 2.	3:2
Hypin' Woman Blues, chorus 1.	4:3
On Your Way Blues.	6:3
She's My Old Time Used To Be, solo 1.	2:2, 3:3, 10:2
She's My Old Time Used To Be, solo 2.	4:1, 7:3
	17 occurrences.

Fig. 4-57. Cell 14a.

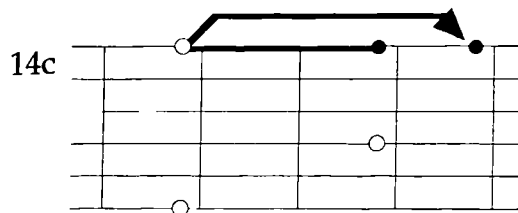
Strings used: B/E
 Tones used: 2nd, root, 5th
 Gestures used: 14 and 15



- | | |
|---------------------------------------|----------------|
| I Got a Break Baby, chorus 2. | 7:4 |
| Mean Old World, chorus 1. | 9:1 |
| Stormy Monday. | 2:4 |
| Description Blues. | 7:4 |
| You're My Best Poker Hand, chorus 2. | 6:4 |
| First Love Blues. | 2:3, 3:1 |
| On Your Way Blues. | 4:2 |
| She's My Old Time Used To Be, solo 1. | 6:4 |
| | 9 occurrences. |

Fig. 4-58. Cell 14b.

Strings used: E
 Tones used: 2nd, root, b3rd
 Gestures used: 14 and 29

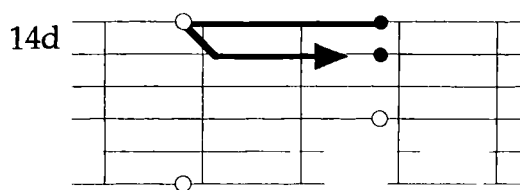


- | | |
|-----------------------------------|----------------|
| Bobby Sox Blues. | 8:3 |
| Description Blues. | 8:3 |
| First Love Blues. | 5:3 |
| Too Much Trouble Blues, chorus 2. | 2:3 |
| Too Much Trouble Blues, chorus 3. | 1:3, 3:2 |
| | 6 occurrences. |

Fig. 4-59. Cell 14c.

Similarly 14d, 14e and 14f have related 3 - 1 - 3 toggle motions. Cell 14d (fig. 4-60) descends from the 2nd degree to the 6th via the root note. Cell 14e (fig. 4-61) is the same gesture but culminating in a string inflection of the 6th degree to the neutral 7th. Cell 14f (fig. 4-62) is the same gesture as 14e except that the performer skips the B string and ends on the inflected 4th degree.

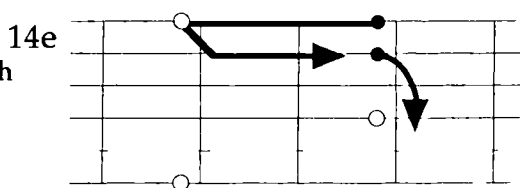
Strings used: B, E
 Tones used: 2nd, root, 6th
 Gesture used: 14



I Got a Break Baby, chorus 1. 8:2
 Wise Man Blues. 6:2

Fig. 4-60. Cell 14d.

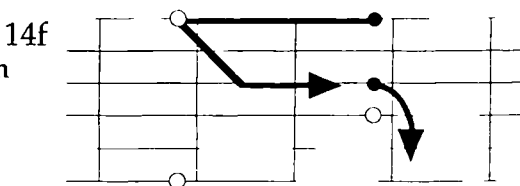
Strings used: B, E
 Tones used: 2nd, root, infl. 6th
 Gesture used: 14



Bobby Sox Blues 5:4
 T-Bone Jumps Again, chorus 2. 8:2

Fig. 4-61. Cell 14e.

Strings used: G, E
 Tones used: 2nd, root, infl. 4th
 Gesture used: 14



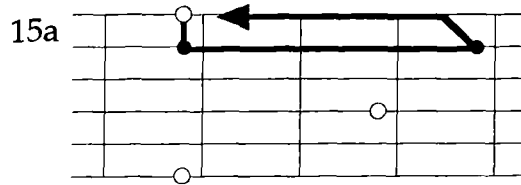
Mean Old World, chorus 1. 2:3
 She's My Old Time Used To Be, solo 1. 4:4

Fig. 4-62. Cell 14f.

4. 5. 9. Cells 15a - d.

All of the cells 15a - d open with a first finger side-stepping motion between the root note on the E string and the 5th degree on the B string. The gesture is a reversal of gesture 5a. Cells 15a and 15c share the same 1 - 1 - 4 - 1 motion.

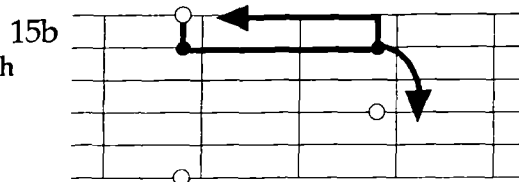
Strings used: B, E
 Tones used: root, 5th, b7th
 Gestures used: 15



- | | |
|---------------------------------------|----------------|
| Bobby Sox Blues. | 8:2 |
| Stormy Monday. | 4:2, 7:4 |
| T-Bone Shuffle, chorus 1. | 3:2 |
| Wise Man Blues. | 2:4 |
| You're My Best Poker Hand, chorus 2. | 7:1 |
| First Love Blues. | 2:3 |
| On Your Way Blues. | 2:2, 4:2 |
| She's My Old Time Used To Be, solo 1. | 6:4 |
| | 10 occurrences |

Fig. 4-63. Cell 15a.

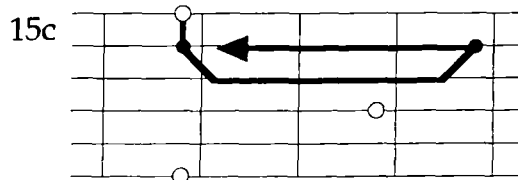
Strings used: B, E
 Tones used: root, 5th, infl. 6th
 Gestures used: 15 and 19



- | | |
|---------------------------------------|------|
| Hypin' Woman Blues, chorus 1. | 12:2 |
| She's My Old Time Used To Be, solo 1. | 9:1 |

Fig. 4-64. Cell 15b.

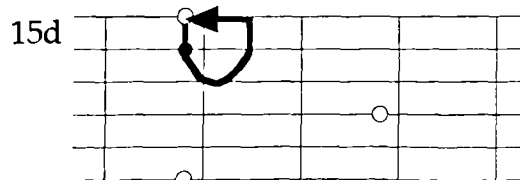
Strings used: B, E
 Tones used: root, 5th, b7th
 Gestures used: 15 and 16



- | | |
|--------------------|------|
| Description Blues. | 7:4 |
| On Your Way Blues. | 10:2 |

Fig. 4-65. Cell 15c.

Strings used: B, E
 Tones used: root, 5th
 Gestures used: 15 and 7

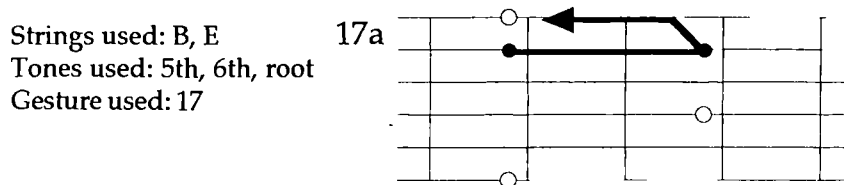


- | | |
|-------------------------------|-----|
| I Got a Break Baby, chorus 2. | 8:1 |
| T-Bone Jumps Again, chorus 2. | 4:1 |

Fig. 4-66. Cell 15d.

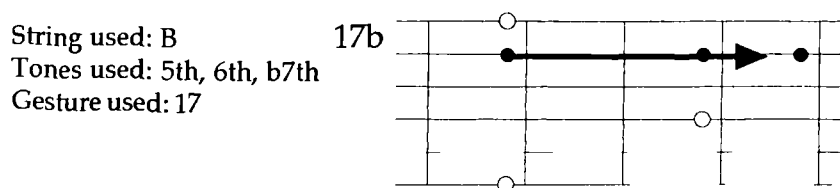
4. 5. 10. Cells 17a - c.

The three cells 17a - c open with an ascending 5th - 6th, gesture 17. The three options for its continuation are a return to the 5th (17c, fig. 4-69), an ascent to the adjacent string (17a, fig. 4-67) both accomplished with a 1 - 3 - 1 fingering strategy, or to continue the ascent on the B string up to the \flat 7th, with a 1 - 3 - 4 left hand pattern (17b, fig. 4-68). 17b is a linear cell form that ascends a single string.



I Got a Break Baby, chorus 1.	8:3
I Got a Break Baby, chorus 2.	7:3
Mean Old World, chorus 2.	9:3
T-Bone Jumps Again, chorus 1.	11:3
T-Bone Jumps Again, chorus 2.	11:3
Stormy Monday.	8:4
You're My Best Poker Hand, chorus 1.	11:3
You're My Best Poker Hand, chorus 2.	8:2, 11:3
Too Much Trouble Blues, chorus 1.	2:4
Too Much Trouble Blues, chorus 3.	7:3
Hypin' Woman Blues, chorus 1.	11:3
Hypin' Woman Blues, chorus 2.	11:3
On Your Way Blues.	12:2
She's My Old Time Used To Be, solo 1.	12:2
She's My Old Time Used To Be, solo 2.	12:2
	16 occurrences

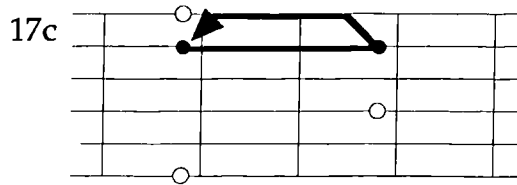
Fig. 4-67. Cell 17a.



Description Blues.	4:3, 5:3
T-Bone Shuffle, chorus 1.	6:1
Wise Man Blues.	4:3, 6:4
First Love Blues.	7:4
Hypin' Woman Blues, chorus 1.	6:3
On Your Way Blues.	8:2, 9:3
	9 occurrences

Fig. 4-68. Cell 17b.

String used: B
 Tones used: 5th, 6th
 Gestures used: 17 and 9



I Got a Break Baby, chorus 1.	5:1
Mean Old World, chorus 1.	5:1
Description Blues.	6:1
Hypin' Woman Blues, chorus 2.	8:2
On Your Way Blues.	5:2, 5:4
She's My Old Time Used To Be, solo 2.	5:1, 6:1
	8 occurrences

Fig. 4-69. Cell 17c.

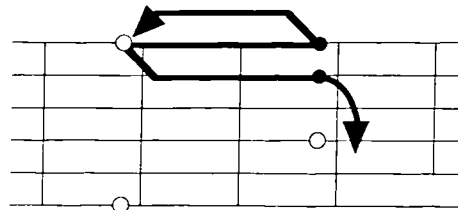
4. 5. 11. Cells 19a - d.

The cells 19a - d feature gesture 19 an ascent from the inflected 6th on the B string to the root on the E string.

It is common for Walker to follow gesture 19 with the 2nd degree on the E string in the form of an upper auxiliary tone which returns to the tonic as seen in 19a.i (fig. 4-70). In 19a.ii (fig. 4-71) the inflected 6th is preceded by the 5th on the B string, as indicated on the diagram.

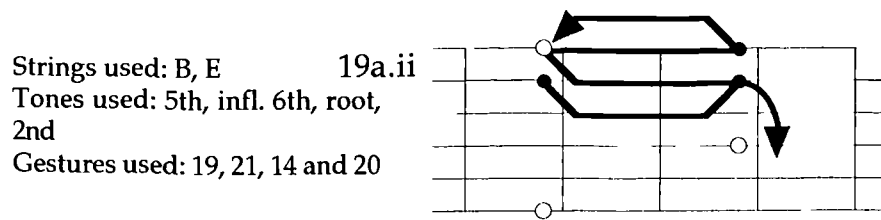
Strings used: B, E
 Tones used: infl. 6th, root, 2nd
 Gestures used: 19, 14 and 20

19a.i



Bobby Sox Blues.	6:3
T-Bone Jumps Again, chorus 2.	8:3
T-Bone Shuffle, chorus 1.	7:1
Too Much Trouble Blues, chorus 1.	9:1
	4 occurrences.

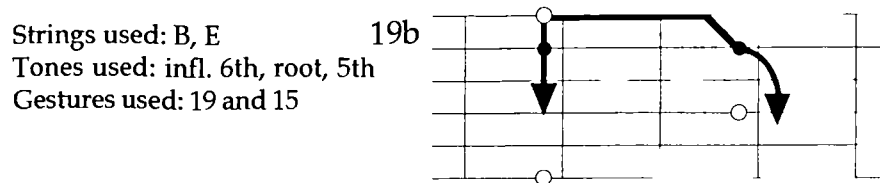
Fig. 4-70. Cell 19a.i.



Mean Old World, chorus 1.	p.u., 2:2, 9:1
Description Blues.	8:2
First Love Blues.	5:3
Hypin' Woman Blues, chorus 1.	12:2
She's My Old Time Used To Be, solo 1.	10:1
She's My Old Time Used To Be, solo 2.	4:1
	8 occurrences

Fig. 4-71. Cell 19a.ii.

The cell 19b (fig. 4-73) features the left hand index finger side stepping motion across an adjacent pair of strings. In 'Too Much Trouble Blues' chorus 3 the gesture appears as a riff figure with four repetitions.

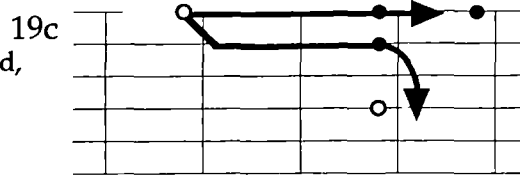


T-Bone Jumps Again, chorus 1.	6:1
T-Bone Shuffle, chorus 1.	1:1
First Love Blues.	9:4
Too Much Trouble Blues, chorus 3.	8:4 [riff x4]
She's My Old Time Used To Be, solo 1.	9:3
She's My Old Time Used To Be, solo 2.	9:1
	8 occurrences.

Fig. 4-72. Cell 19b.

In the cell 19c (figure 12. 53) the ascending line is continued up the 2nd and flattened 3rd degrees in a left hand 3 - 1 - 3 - 4 motion.

Strings used: B, E
 Tones used: infl. 6th, root, 2nd,
 b3rd
 Gestures used: 19 and 20

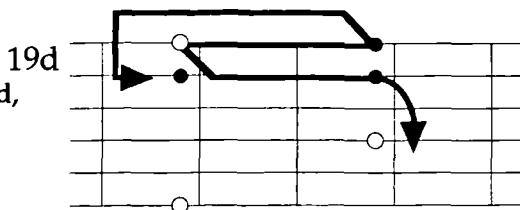


Wise Man Blues. 8:4, 9:4
 Hypin' Woman Blues, chorus 2. 1:2
 3 occurrences.

Fig. 4-73. Cell 19c.

Cell 19d (fig. 4-74), a left hand x formation on the fretboard, is executed with the finger sequence 3 - 1 - 3 - 1 crossing the strings in pairs B - E and E - B.

Strings used: B, E
 Tones used: infl. 6th, root, 2nd,
 5th
 Gestures used: 19 and 20



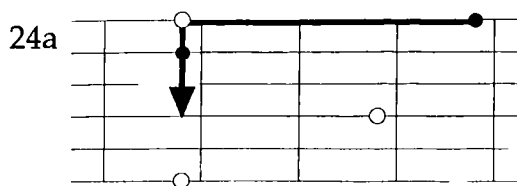
I Got a Break Baby, chorus 2. 9:1
 She's My Old Time Used To Be, solo 1. 7:3
 2 occurrences

Fig. 4-74. Cell 19d.

4. 5. 12. Cells 24a - c.

The three cells 24a - c open with gesture 24 a left hand 4 - 1 fingered descent from the flattened 3rd to the root on the E string. This gesture is followed most frequently by a descent to the 5th on the adjacent string (fig. 4-75).

Strings used: B, E
 Tones used: b3rd, root, 5th
 Gestures used: 24 and 15

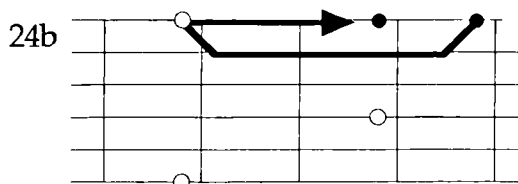


- | | |
|-----------------------------------|----------------------|
| I Got a Break Baby, chorus 1. | 9:2 |
| T-Bone Jumps Again, chorus 1. | 11:4 |
| T-Bone Jumps Again, chorus 2. | 4:1, 11:4 |
| T-Bone Shuffle, chorus 2. | 4:1, 4:2 |
| Too Much Trouble Blues, chorus 3. | 3:3 |
| Hypin' Woman Blues, chorus 1. | 11:4 |
| On Your Way Blues. | p.u. [riff x4], 10:2 |
| | 13 occurrences. |

Fig. 4-75. Cell 24a.

In cell 24b (fig. 4-76) the gesture is followed by a two fret step up on to the third finger on the E string.

Strings used: E
 Tones used: b3rd, root, 2nd
 Gestures used: 25 and 20

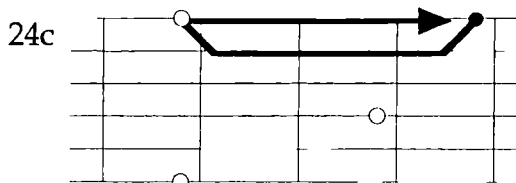


- | | |
|-----------------------------------|-----------|
| I Got a Break Baby, chorus 2. | 7:4 |
| Too Much Trouble Blues, chorus 2. | p.u., 2:4 |
| On Your Way Blues. | 6:3 |

Fig. 4-76. Cell 24b.

Cell 24c (figure 12. 59) is a circular form that returns to the opening tone in a left hand 4 - 1 - 4 motion.

Strings used: E
 Tones used: b3rd, root
 Gestures used: 25 and 27

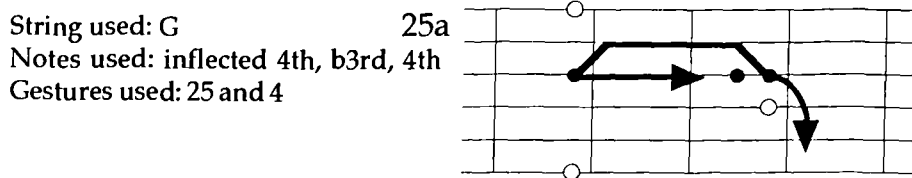


- | | |
|--------------------------------------|------|
| You're My Best Poker Hand, chorus 1. | 11:4 |
|--------------------------------------|------|

Fig. 4-77. Cell 24c.

4. 5. 13. Cells 25a - b.

Cell 25a is a circular form that begins with the inflected 4th stepping down two frets to the neutral 3rd on the same string (gesture 25) followed by a return to the same fret location but with the string inflection released. The cell is accomplished with a 3 - 1 - 3 fingering pattern.



Mean Old World, chorus 1.	10:1
Mean Old World, chorus 2.	5:1
Bobby Sox Blues.	5:1, 7:3, 11:3
T-Bone Jumps Again, chorus 1.	2:3
T-Bone Jumps Again, chorus 2.	10:2
Stormy Monday.	8:3, 9:2, 11:3
Description Blues.	2:2, 11:3
Wise Man Blues.	11:3
You're My Best Poker Hand, chorus 1.	10:2
Too Much Trouble Blues, chorus 1.	5:1, 7:3, 6:3
On Your Way Blues.	3:4, 10:3, 11:3
She's My Old Time Used To Be, solo 1.	10:4
	21 occurrences

Fig. 4-78. Cell 25a.

In cell 25b gesture 25 is followed by the index finger side stepping motion across the G and B strings. The cell is accomplished with a 3 - 1 fingering pattern.

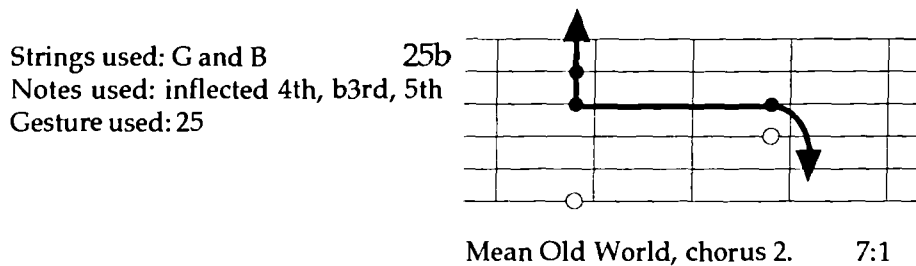
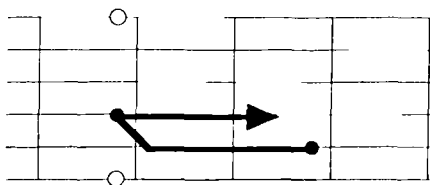


Fig. 4-79. Cell 25b.

4. 5. 14. Other Gestures 1 - 9.

In cell og. 1 (fig. 4-80) the $\flat 7^{\text{th}}$ is a component in a hairpin gesture that features an ascent to the tonic note: 5th, $\flat 7^{\text{th}}$, Root. It is accomplished with a left hand 3 - 1 - 3 sequence. In these examples the $\flat 7$ played against the tonic chord is a blue note. In three cases (those that occur at bar 10:4) the gesture functions as a precedent to an arpeggio figure in the final cadence.

Strings used: A/D
 Tones used: 5th, $\flat 7^{\text{th}}$, root
 Gesture used:



og. 1

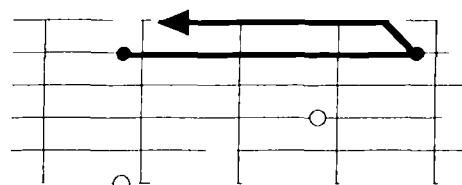
I Got a Break Baby, chorus 1.	3:1, 10:1, 10:4
I Got a Break Baby, chorus 2.	9:4, 10:3
Mean Old World, chorus 1.	3:4
Mean Old World, chorus 2.	8:1 [riff x2]
Bobby Sox Blues.	7:1
Stormy Monday.	3:2
Description Blues.	6:4
First Love Blues.	10:4
On Your Way Blues.	3:1

13 occurrences

Fig. 4-80. Cell og. 1.

Cell og.2 (fig. 4-81) is another hairpin gesture that comprises the same three tones ascent as cell og. 1 but on a different string set.

Strings used: B/E
 Tones used: 5th, $\flat 7^{\text{th}}$, root
 Gesture used: 26



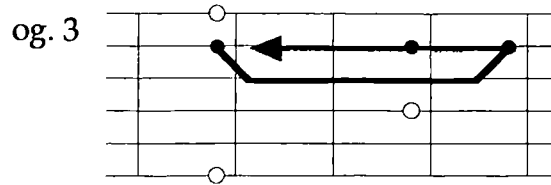
og.2

I Got a Break Baby, chorus 1.	4:4
Too Much Trouble Blues, chorus 3.	2:4

Fig. 4-81. Cell og. 2.

Cell og. 3 (figure 12. 62) is a circular form that also includes a linear descent on the G string comprising a 1 - 4 - 3 - 1 left hand motion.

String used: B
 Tones used: 5th, b7th, 6th
 Gestures used: 9 and 13

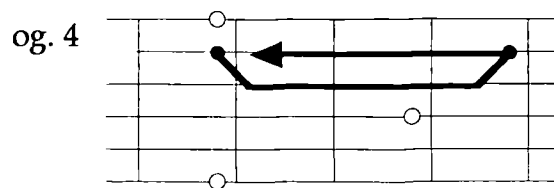


I Got a Break Baby, chorus 1. 7:2
 First Love Blues. 4:2
 Too Much Trouble Blues, chorus 3. 10:1

Fig. 4-82. Cell og. 3.

Cell og. 4 (fig. 4-83) is the same circular form but without the linear descent.

String used: B
 Tones used: 5th, b7th
 Gestures used: 26

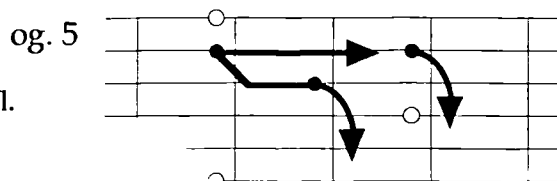


Stormy Monday. 2:4
 T-Bone Shuffle, chorus 2. 4:3

Fig. 4-83. Cell og. 4.

All of the occurrences of the inflected 3rd on the G string throughout the Walker transcriptions are contained in an identical three-tone riff formation (cell og. 5, fig. 4-84) at the arrival of the dominant chord at bar nine. The three tones form the neutral 7th, root and neutral 3rd of the dominant chord and are accomplished by a 2 - 1 - 3 left hand sequence. Two solos that feature this cell: 'Hypin' Woman Blues' and 'On Your Way Blues' were recorded at the same session.

String used: B/G
 Tones used: 5th, infl. 3rd, infl. 6th
 Gesture used: 21

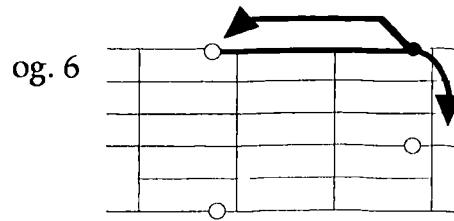


Bobby Sox Blues. 9:2 [riff x3]
 Hypin' Woman Blues, chorus 2. 9:2 [riff x2]
 On Your Way Blues. 9:1 [riff x3]
 8 occurrences

Fig. 4-84. Cell og. 5.

The inflected 2nd on the E string is most commonly used as a component in a three tone circular gesture; root - inflected 2nd - root, cell og. 6 (fig. 4-86).

String used: E
 Tones used: root, infl 2nd
 Gesture used:

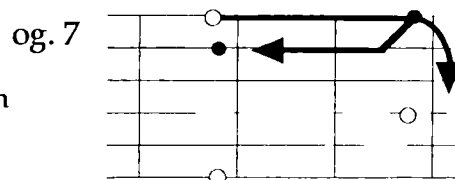


Mean Old World, chorus 2. 9:4
 Hypin' Woman Blues, chorus 2 11:4
 On Your Way Blues. 8:3

Fig. 4-85. Cell og. 6.

In cell og. 7, a similar three tone grouping to cell og. 6, the concluding tone is the dominant on the adjacent string.

String used: E/B
 Tones used: root, infl 2nd, 5th
 Gesture used:

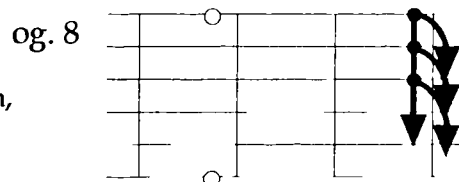


Too Much Trouble Blues, chorus 3. 7:4

Fig. 4-86. Cell og. 7.

Cell og. 8 (fig. 4-87) is a rare traverse linear form, a three tone gesture where the same semi-tone inflection is repeated across the top three strings of the guitar at the same fret location, forming the blue note series neutral 3rd - neutral 7th - neutral 5th. This cell is formed from a complex left hand motion whereby the first string is inflected with the third finger. After articulating this note the finger slips across to the adjacent B string and inflects that note. The gesture is then repeated with a slip onto the adjacent G string. This cell is played in two separate solos: 'Bobby Sox Blues' and 'Stormy Monday'.

String used: E/B/G
 Tones used: infl 2nd, infl, 6th,
 infl. 4th
 Gesture used:



Bobby Sox Blues. 10:2
 Stormy Monday. 8:4

Fig. 4-87. Cell og. 8.

Cell og. 9 (fig. 4-88) is a descent to the 5th on the A string from the flattened 3rd on the G string via the root note.

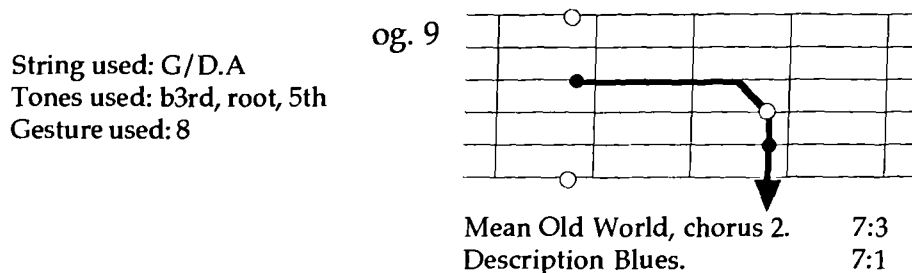


Fig. 4-88. Cell og. 9.

4. 5. 15. Cell Layout within the Model.

Volume two fig. 89 shows the location of the cells within the model.

It can be seen on the chart that all of the solos, except for one, feature 1b cells at bar 11:1 of the model. This is an indication of the performer's awareness of the model underlying his improvisation. The cell outlines a major arpeggio and contains a #2nd - 3rd resolution. Walker evidently chooses to perform this cell, emphasising the major 3rd degree, at the re-arrival of the tonic chord after the dominant chord of bars 9 and 10. The one solo from which the cell is absent is the climactic third chorus of 'Too Much Trouble Blues' which Walker closes with a dramatic chordal phrase. In six of the solos Walker makes a second statement of the cell 1b at bar 12:1.

In a number of solos Walker plays the 1b cell in bars 3 or 4. This is after an introductory section and before departing the tonic chord at bar 5. There are also three solos where Walker plays the motive at bar 7:1 on the return to the tonic from the sub-dominant chord. In 'She's My Old Time Used To Be' solo 2, Walker begins the build up to the 1b motive at bar 6:2 with a repeated root note against the sub-dominant chord but the #2nd - 3rd resolution does not occur until after the bar line at bar 7:1.

The majority of the examples of cell 1a occur in bars 5 and 6, an incidence that is again related to the harmonic rhythm of the model. As was seen above, the performer reserves the sounding of a #2nd - 3rd resolution for the tonic chord. The major third of the tonic would form the major 7th of the sub-dominant chord. Instead he uses cell 1a against the sub-dominant chord, the tones of which, an ascent through the 5th - b7th - root of the sub-dominant, are stylistically more appropriate.

Both cells 1a and 1b open with the gesture 1, a root - neutral 3rd ascent, but the choice of gesture that follows is triggered by the harmonic scheme underlying the model.

Other cells that contain the #2nd - 3rd resolution are similarly placed against the tonic chord. In particular 2b.i is frequently placed in the 11th bar and 2b.ii begins at bar 10:4 so that the resolution on to the 3rd degree occurs at the first beat of the tonic chord of bar 11.

4. 6. Motives.

Volume two figs. 90, 91 and 92 show larger motivic structures that are generated from the abutting or dovetailing together of two cells. There are a wealth of motivic structures to be found in Walker's oeuvre. They are sub-divided here into three groups:

- Group 1) Motives that are constructed from the 'blues scale'.
- Group 2) Motives that contain a #2nd - 3rd resolution.
- Group 3) Mixed motives.

4. 6. 1. Group 1.

Eleven motives are presented in group 1 some of which are divided into two separate gestures. With the exception of fig. 90-7 the motives occur on the middle strings, A, D, G, B) of the guitar. The predominant left hand fingering strategy of group 1 motives is the alternation of fingers 1 and 3 at two fret intervals. Three examples, 90-1, 90-6 and 90-11, feature the side-slipping third finger move between consecutive strings at the same fret.

4. 6. 2. Group 2.

Nine motives are presented in group two, all of which contain the left hand 1 - 2 motion which resolves the #2nd degree to the 3rd degree. The #2nd - 3rd occurs in three different contexts:

- Ascent patterns between the root to the 5th associated with the left hand fingering 3 - 1 - 2 - 1 (Figs. 91-1, 91-2, 91-6, 91-7, 91-8 and 91-9).
- Descent patterns from the 5th to the root formed by a 1 - 3 - 1 - 2 - 3 left hand sequence (91-3 and 91-4).
- Patterns centred on the 5th in a 1 - 3 - 1 - 2 - 1 left hand pattern (fig. 91-5).

4. 6. 3. Group 3.

There are sixteen group 3 motives presented on volume two fig. 92. The two related motives 92-1 and 92-2 open with cell 12a, the inflected 4th - 5th - root on the G, B and E strings respectively, a gesture which has become something of a cliché in blues and rock guitar repertoires. In Walker's examples this gesture is concluded with a return to the 5th, via the $\flat 7$ th (fig 92-1), or via the $\flat 7$ th and 6th degrees (fig. 92-2).

These mixed motives combine elements derived from two scales; the blues scale and the pentatonic scale. Motives, for example, contain the 6th and $\flat 7$ th degrees, the 6th and $\flat 5$ th or the 2nd and $\flat 7$ th. Fig. 4-89a shows two pentatonic layouts on the top two strings of the guitar; a) shows the pentatonic layout comprising the 5th and 6th on the B string and the root and 2nd on the E string, and b) shows the blues pentatonic comprising 5th and $\flat 7$ th on the B string and root and $\flat 3$ rd on the E string. Triadic tones are played with the index finger, the 5th and 6th degrees with finger 3, and the blue notes with finger 4. It is a characteristic of Walker to combine elements derived from these two pentatonic scales in fingering patterns on the fretboard by alternating between the upper tones on each string, as shown in fig. 4-89.c) and d)

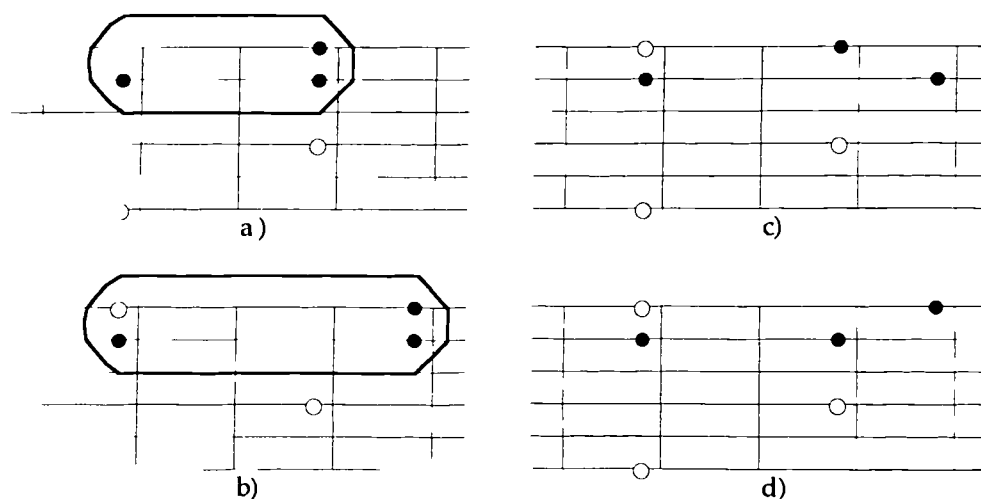


Fig. 4-89. Pentatonic cells.

Examples of these can be seen in the motives at figs. 92-7 and 92-9.

Longer motives are commonly found throughout Walker's improvising where three cells are similarly dovetailed or abutted. The following is a chart of recurrence

of three adjoined cells, followed by the number of times they are combined throughout the transcriptions.

	Cells		occurrences
9a	2a	1a	x8
2a	1b	5a	x7
5a	11a	25a	x6
1b	5a	11a	x5
11a	25a	1d	x5
14a	5b	9e	x5
1d	1b	5a	x5
25a	1d	1b	x5
5b	9d	14a	x5
11a	25a	2a	x4
2a	1b	17a	x4
1c	1a	2a	x4
2b.ii	1b	17a	x4
5b	9b	2b.i	x4
2a	1a	17b	x3
1b	5a	2b.i	x3
14a	5b	9b	x3
1b	17a	26a	x3
1b	17a	27	x3
1d	1b	5c	x3
5b	9b	2a	x3

Fig. 4-90. Three cell groupings.

4. 6. 4. Rhythmic aspects.

The motives are performed with a great deal of rhythmic variety but duplicates are much more common in Walker's output than in Johnson's. This is perhaps an indication that Walker's playing is more consistent than Johnson's and in keeping with Nettl's observation that a musician who improvises repeatedly on the same model does so with a degree of predictability.

The most frequently occurring duplicate is the motive shown in volume two fig. 91-8 which recurs ten times, seven of which are in the same rhythm. It can be seen that this motive occurs, with one exception, at either the beginning bar eleven or bar twelve and as such is one of Walker's cadential patterns.

One motive, volume two fig. 90-4, has six duplicates. Motives which have five duplicates are: figs. 90-7 and 90-8, and figs. 91-15, 91-16 and 91-17. The majority of these the duplicates are associated with cadential figures.

4. 6. 5. The flattened 5th.

There are eleven occurrences of the $\flat 5^{\text{th}}$ tone on the G string, (cells 9b, and 9bi) which occur in distinctive longer motivic structures made up from a chain of cells shown in fig. 4-91.

Solo	Bar	Cells
'I Got a Break Baby', chorus 1.	4:1. 5a	9bi 2bi
'I Got a Break Baby', chorus 2.	8:1 5b	9b 2bi
'Mean Old World', chorus 1.	6:3 5b	9b 2bi
'Mean Old World', chorus 2.	9:1 5b	9b 2bi
'She's My Old Time Used to Be'. solo 1.	7:1 5b	9b 2bi
'I Got a Break Baby', chorus 1.	7:1 <u>og3</u>	9b 2bi
'Description Blues'.	4:2 5b	9b 2a
'Too Much Trouble Blues', chorus 2.	3:4 5b	9b 2a
'She's My Old Time Used to Be'. solo 1.	3:4 5b	9b 2a
'T-Bone Shuffle', chorus 1.	7:4 5b	9b 2d
'First Love Blues'.	4:2 <u>og3</u>	9b 2a

Fig. 4-91. Flattened 5th cell groupings.

The examples that occur in 'I Got a Break Baby' chorus 2 and 'Mean Old World' chorus 1 and 2, (recordings that both took place on the same 1942 session) and the example, in 'She's My Old Time Used To Be' solo 1, (recorded five years later) are as a component of a chromatic motive that descends from the root note on the E string via the $\flat 7^{\text{th}}$, 6th and 5th on the B string, the $\flat 5^{\text{th}}$, 4th and $\flat 3^{\text{rd}}$ on the G string, and then ascends back to 5th on the B string via the 3rd. These are shown at volume two fig. 93-2 and 93-3.

The other context in which the $\flat 5^{\text{th}}$ occurs is as a component in a descending line from the tonic down an octave, or in one case ('T-Bone Shuffle') a tenth. The most common form is a straight descent: root, $\flat 7^{\text{th}}$, 6th, 5th, $\flat 5^{\text{th}}$, 4th, $\flat 3^{\text{rd}}$, to the root on the D string. In 'T-Bone Shuffle' Walker skips the root tone on the D string to end on the dominant tone on the A string. This anticipates the arrival of the dominant chord by a beat. These are shown as volume two 93-4, 93-5 and 93-6.

Each of these gestures covers a four fret span. The tones are played by the placement of one finger at each fret location. Thus in the first three examples the motion on the G string requires the use of all four left hand fingers in a 4 - 3 - 1 - 2 sequence.

Volume two figs. 93-2 and 93-4 present an example of the performer employing differing gestural activity to produce variation in a motivic structure. The first seven tones are identical in both examples. Having arrived on the blue third on the G string the two gestures proceed in different directions: In 93-2 the tone is followed by gesture 3 in which the blue note is resolved by stepping up to the third on the G string and thence to the 5th on the B string. In 93-4 the blue note is followed by gesture 8, a step down to the root note on the D string.

4. 6. 6. Cadences figures.

In Walker's performance practice, as in Johnson's, many of the cadence points can be found to be constructed by linking together a number of cells.

Solo							
Number.							
<u>type one</u>							
7	1b	17a	26a				
13	1b	17a	26c				
1	1b	7	2b.i	5a			
2	1b	5a	2b.i	5a			
3	1b	5a	2b.i	5a			
11	1b	5a	2	7			
16	1b	15	2b.i	7			
4	1b	5a	2bii	1b			
5	1b	5a	11a	25a	1d	1b	5c
8	1b	5a	11a	25a	1d	1b	5c
9	1b	5a	11a	25a	1d	1b	5c
12	1b	5a	11a	25a	1d	1b	5c
15	1b	5a	2c	1d	1b	5c	
21	1b	5a	11	25a	2a	1b	17a
22	1b	5a	11b	10	2bii	1b	17a
<u>type two</u>							
18	2b.i						
20	2b.i	1b	17a				
14	2bii	1b	17a				
6	2bii	1b	17a	26a			
17	2bii	1b	15	2a			
19	2bii	1b	17a	26a	15b		
10	2bii	1b	15	2b.i	7		
23	2bii	1b	5b	2b.i	1b	17a	

Fig. 4-92. Cadence figures.

Cadences can be broadly divided into two types; those that begin with the cell 1b, and those that begin with the cell 2b.ii. As was seen with Johnson, Walker's cadence figures contain similar fragments.

Cadences in solos 2 and 3 are identical (fig. 4-93). These solos, 'I Got a Break Baby' and 'Mean Old World' were recorded at the same session.

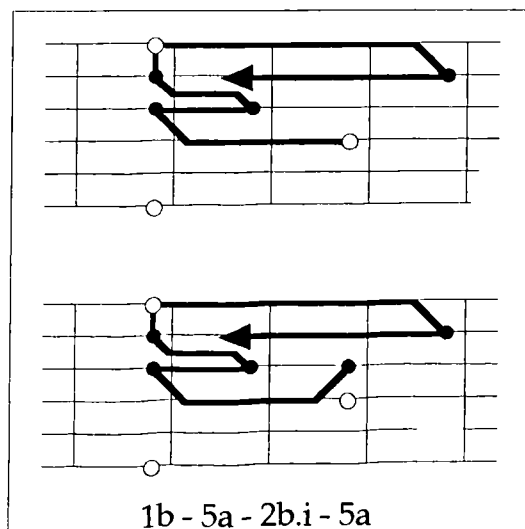


Fig. 4-93. Cadence motive a.

The longer cadences in solos 5, 8, 9 and 12 comprise the same cells (fig. 4 94). Solo number 5, 'Bobby Sox Blues', was recorded a year prior to solo numbers 8, 9 and 12, 'Stormy Monday' 'Description Blues' and 'Wise Man Blues'.

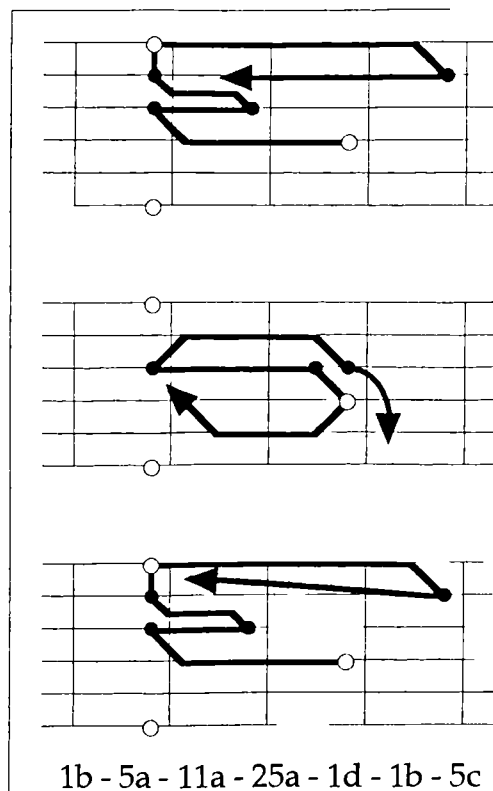


Fig. 4-94. Cadence motive b.

Certain traits are clearly recurrent in Walker's cadential figures which begin either at bar 10 beat 3, or at bar 11 beat 1. Those beginning on bar 11:1 open with the 1b cell and those beginning in the 10th bar open with the 2b.ii cell. Walker generally concludes his improvisations with an arpeggio based figure that includes the #2nd - 3rd resolution.

The simplest cadence patterns, in solos 7 and 13, comprise 3 cells. In these examples a full octave arpeggio figure is played including the #2nd - 3rd resolution, and the added sixth degree. After reaching the highest tone, the blue third on the top E string, solo 7 descends back to the dominant note and in solo 13 the two concluding tones of the ascent (root - blue third) are repeated. Solo 18 is an oddment amongst those under consideration here. This particular twelve bar ends on a chordal, percussive cadence.

Solos 1, 2, 3, 11, 16 comprise four cells. In these examples the opening gesture is an octave arpeggio ascent; cell 1b. Each contains the #2nd - 3rd resolution and concludes with a descent back on to the dominant note; either directly (solo 16), via the \flat 7th (solos 2, 3 and 11), or via the inflected 6th (solo 1). In these cadences the dominant note is a pivotal tone. The opening phrase concludes on it and the subsequent phrase begins with it. The subsequent phrase in these examples contains chromatic movement around the third degree; 4th - #2nd - 3rd (cell 2b.i), fingered 3 - 1 - 2, with the left hand. It can be seen that the third is omitted from the second phrase in solo 11. It would not be unreasonable to suggest that the performer *had* missed this tone 'on the fly', because the gesture is so prevalent in his style that one expects it. Indeed the phrase as it occurs is so uncharacteristic to this performer that it 'looks' out of keeping with his style. Each of these phrases concludes with a first inversion arpeggio, either ending on the root note (solos 11 and 16), the dominant (solos 2 and 3), or the 6th (solo 1). All of the above examples commence at bar 11:1.

Solos 6 (fig. 4-95), 14, 17, and 20 are a reversal of the above four cell cadences. Here each example begins with a cell that descends from the dominant note, and contains the 4th - #2nd - 3rd movement (cells 2b.i or ii). With the exception of solo 20 (which returns to the dominant) they all descend to the root note. The subsequent phrase in each of these four examples is based on an octave arpeggio ascent: cells 1b - 17a (3 examples), or 1b - 15 (1 example)

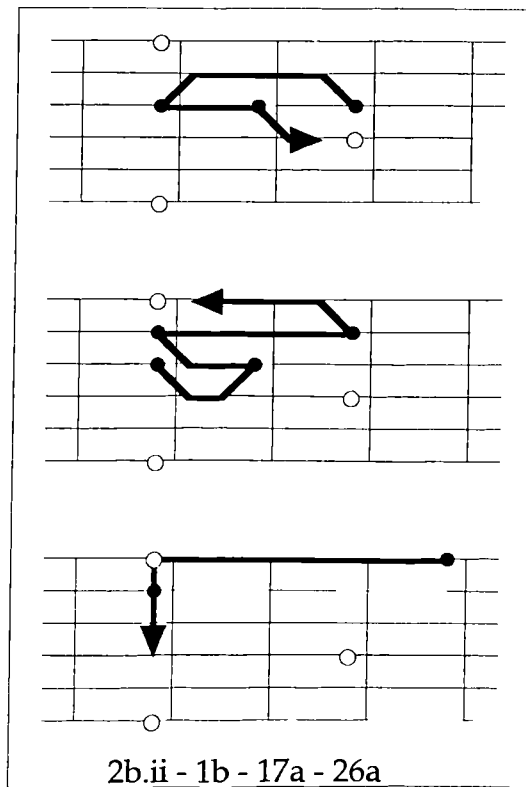


Fig. 4-95. Cadence motive c.

Solos 4, 5, 8, 9, 10, 12, 15, 19, 21 and 22, of varying complexity, comprise 4 - 7 cells. Solo 10 (fig. 12. 72) and solo 19 open with the 4th - #2nd - 3rd, 2bii cell. Each has a second phrase that is based on the ascending octave arpeggio, 1b. Solo 19 concludes with an ascent from the dominant to the tonic. Solo 10 employs a gesture that combines the 4th - #2nd - 3rd motive with an ascending arpeggio.

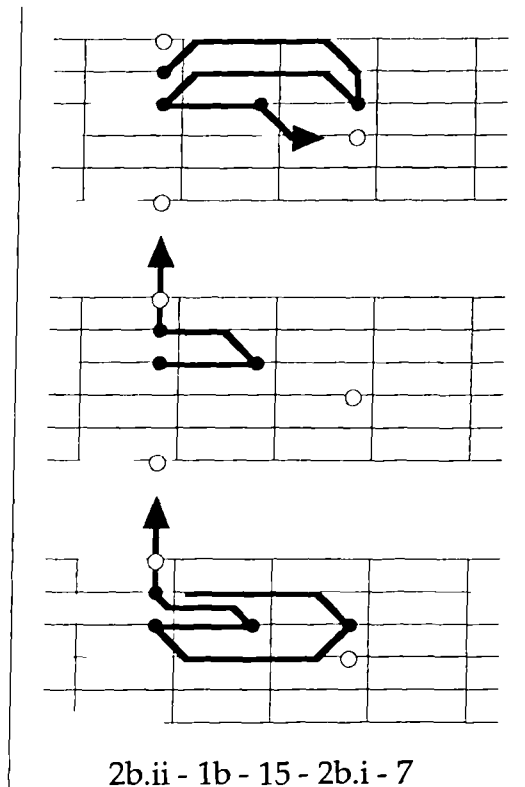


Fig. 4-96. Cadence motive d.

In solos 4, 5, 8, 9, 12, 15, 21, and 22 the opening gesture (cell 1b), an octave arpeggio ascent, is concluded with a descent back to the dominant via the $\flat 7^{\text{th}}$ (cell 5a). Each of the second phrases in these examples is constructed from movement on the D, G and B strings of varying complexity. Each contains an octave arpeggio figure (cell 1b).

In solo 23 there are six cells; the 4th - #2nd - 3rd cell (2b.ii), the octave arpeggio (1b), a descent to the dominant (5b) a repeat of the cell 2b.ii, and a second 1b arpeggio figure.

4. 6. 7. Antecedent and Linking Phrases.

The antecedent and linking phrases that occur in the 10th bar precede the cadential figures described above. The majority of these employ elements derived from the "blues scale", in particular the neutral third on the G string. As these figures occur in the tenth bar of the blues form, they are accompanied by the dominant chord. Cells og1, 2a, 12b, are commonly used in the 10th bar. Cell 2a is often used as a descent to the tonic prior to the 1b cell of the cadence figure. The contrast of the blue note against the #2nd - 3rd resolution occurs in the ensuing bar with the return of the tonic chord.

4. 7. Left hand and right hand articulation and co-ordination.

In Walker's improvisations, as in Johnson's, almost every tone is plucked by the performer's right hand. Hammer-ons and pull-offs are seldom used and then confined to a few practised localised gestures.

Walker's playing exhibits greater rhythmic fluidity than Johnson's: Walker does not employ the same rhythmic motor patterns that were seen in Johnson's improvisations but instead employs shorter phrasing and often varies between swung quavers, triplet groupings and semi-quavers, even within the same phrase.

It was seen that Johnson makes use of string inflections, hammer-ons, pull-offs, and slides to varying extents. The most common of these techniques in Walker's as in Johnson's improvisations, is the string inflection. Walker makes extensive use of string inflections which are used to create characteristic blues elements. Walker seldom employs a bend and release, or a pre-bend and release. Inflected tones used throughout the solos are:

Tone	String	Number of occurrences
4th	G	179
6th	B	56
3rd	G	10
2nd	E	9
b7th	B	1

Fig. 4-97. Sting inflections.

Each of these inflections features a determined push of the string in an ascent of somewhere between a semi-tone or a tone: thus the 4th is pushed up towards the 5th but is often quitted while the tone is still slightly flat, (a neutral 5th). The 6th and 2nd degrees are inflected, towards the 7th and 3rd degrees respectively, forming neutral 7ths and neutral 3rds. The inflection of the 3rd to the 4th degree occurs in a localised gesture. With this one exception, all of the inflections are to blue notes. Walker's repertoire of string inflections is not as varied as Johnson's. Three gestures predominate (figure 12. 73):

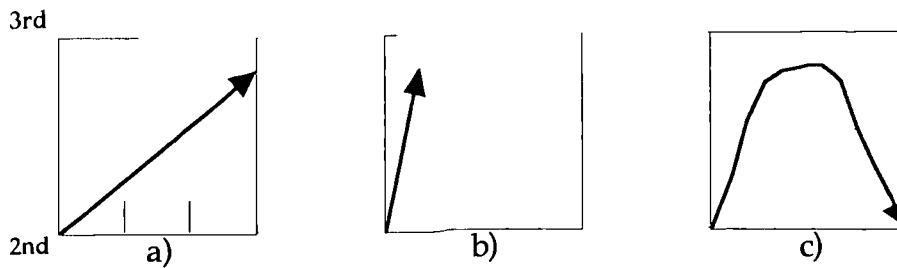


Fig. 4-98. Sting inflections.

In a) Walker produces a slow ascent from the fretted tone towards the neutral interval. The tone is not sustained at a destination tone, but rather is quitted to the ensuing tone at some stage of the ascent.

Example b) is a characteristic gesture of Walker whereby the inflection is a rapidly executed staccato tone in which the fretted tone is played in the manner of an *acciaccatura*. This tone, played as the inflected 4th on the G string, is most often followed by a staccato 5th on the B string played on the subsequent beat, as in the opening bars of *Hypin' Woman Blues* chorus 1.

The bend and release shown at c) is far less common in Walker's output.

In addition to the above inflections Walker makes frequent use of a micro-tonal inflection of less than a semi-tone on the flattened 3rd degree. This is executed by Walker on both the top E string and on the G string. The tone is pushed slightly to raise the pitch from the minor 3rd, but not as far as the major 3rd degree, that is to a neutral or blue third.

Three of these tones, the 4th on the G string, the 2nd on the E string and the 6th on the B string, are located two frets above the position at which Walker's index finger is located. It is probable, then, that all of these inflections are executed with the left hand third finger, as was the case with Johnson's string inflections. Thus the combination of the physical layout of the guitar and Walker's chosen left hand position gives rise to the three blue notes: neutral 5th, 3rd and 7th, these being produced by an identical left hand motion on the top strings of the guitar. The index finger, located at the appropriate position relative to the E shape, together with the thumb that opposes it on the back of the guitar neck, function as a fulcrum. The wrist pivots about this to instigate the string inflection.

4. 7. 2. Hammer-ons and pull-offs

The hammer-on and the pull-off both occur in Walker's output but are confined to three localised gestures. The principle hammer-on that Walker employs is a semi-tone step up from the #2nd to the 3rd degree on the G string (figure 12. 74). This is accomplished with a left hand 1 - 2 finger motion:

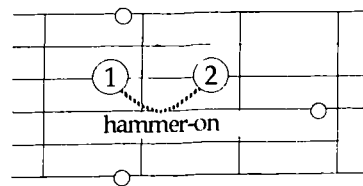


Fig. 4-99. Hammer-on.

This gesture is frequently employed by Walker within the cell 1b. It occurs 26 times throughout the transcriptions. In some examples of the cell 1b Walker gives equal time to the two tones, both of which being articulated by the right hand. When the hammer-on is used the first tone is played as an acciaccatura.

A combined hammer-on/pull-off gesture is employed by Walker that is identical to one used by Johnson. Here the index finger is placed at a fret location and the string plucked. A second tone is produced by hammering-on with the third finger two frets higher and a third tone by a pull-off with the third finger to return to the first tone. Walker produces this gesture on both the B string and the top E string (fig. 4-100):

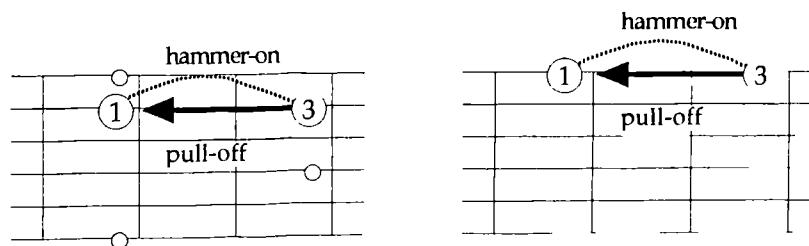


Fig. 4-100. combined hammer-on, pull-off.

The first example above, producing the 5th, 6th and 5th degrees on the B string, occurs seven times in the transcriptions and the second example, producing the root note, 2nd degree and root note on the E string, occurs twice.

It was seen that the slide is a characteristic gesture of Lonnie Johnson's improvisations. Walker does not make any notable use of slides because he executes his solos at one fretboard location.

4. 8. Summary and comments.

The fundamental characteristic of Walker's improvisatory skill is his, almost, exclusive use of a four fret span located at the E shape chord form. This has repercussions on the range of melodic material that he presents. The majority of his left hand patterns are composed from an alternating toggle motion between fingers one and three. Anchor points for the left hand index finger are the flattened 3rd, the root note and, predominantly, the 5th. The third finger frets the 4th, 2nd and 6th degrees above these anchor points respectively. All three of the latter tones can be inflected, by Walker pivoting the wrist about the fulcrum of the anchored index finger, to produce blue notes; the flattened 5th, 3rd and 7th. Linear gestures occur in patterns, incorporating blue notes, such as a left hand 4 - 3 - 1 descent on the E, B or G strings. These three identical gestures producing the tone series $\flat 3^{\text{rd}}$ - 2nd - root, $\flat 7^{\text{th}}$ - 6th - 5th and $\flat 5^{\text{th}}$ - 4th - $\flat 3^{\text{rd}}$ on the three strings respectively. Walker also employs complex left hand string crossing strategies with the third finger and the index finger. These present some evidence that the performer is playing pre-practised gestures; in order to play a two-tone series at speed at the same fret location with the index finger, the finger needs to be lain flat before commencing.

From any given tone, in Walker's oeuvre, there are from one to fifteen destination tones formed from left hand finger movement patterns, but certain destinations predominate. The most common pathways are presented as cell groupings. Larger motivic structures are analysed as comprising two or more cells. Some of the cells display a harmonic aspect, notably a $\sharp 2^{\text{nd}}$ - 3rd resolution which occurs against the tonic chord. Recurrent series of cells groupings were found to occur throughout the transcriptions as can especially be seen at the cadence figures. Exact repetition is more common in Walker's playing than Johnson's. Walker tends to use less cells with greater frequency than Johnson in whose playing there is more variation in the motivic structures.

Motives identified in Walker's improvisations were sub-divided into three types depending on tone content; the blues pentatonic scale, the $\sharp 2^{\text{nd}}$ - 3rd resolution and mixed. It was seen that Walker's presentation of scale differs considerably from that of Johnson. Chapter 2. 1. 3. surveyed various definitions of blues scale. Walker's first group of motives are present the pentatonic definition of the blues scale as proposed by Pass (1977: 22), Lucas (1978: 4) and Bailey and Driver (1992: 64). A series of cells were shown in volume two fig. 93 that included the $\flat 5^{\text{th}}$ that would correspond to the definitions of Eschete (1980: 48), Gamble (1989: 4) and Keller (1998: 83) who present a pentatonic blues scale but also include

the 5th. It may be more accurate, in response Walker's third group of mixed motives, to consider that blues scale for Walker is more akin to the definition of Grigson who defined the blues scale : "as consisting of two distinct pentatonic scales, the major and the minor, plus the flattened 5th as an important additional tone" (1988: 59).

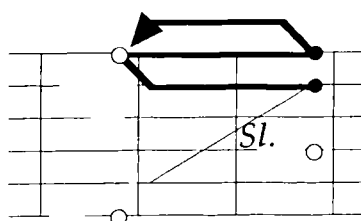
4. 9. Postscript: Lonnie Johnson E shape Cells.

Although it has been seen that Walker improvises almost exclusively in the E chord shape area, and Johnson primarily in the C and A shape areas, that latter does make some use of the E chord shape area, as will be examined here.

Lonnie Johnson makes infrequent use of the E shape chord compared to Walker, and when he does, although using related stylistic devices such as blue notes, the hand gestures are quite dissimilar.

The use of the E shape in period A transcriptions occurs higher up the fretboard than Johnson's normal position C and A shapes, whereas in period B transcriptions the E position is used lower down the fretboard. This is influenced by considerations of key. In the early period the use of the E shape is confined to the key of D, in which it occurs at the 10th fret. ('Have To Change Keys'., chorus 1, and 'Blue Guitars', choruses 2 and 4). In the later period the occurrences of the E shape are in the key of G at the 3rd fret. (Cadences of 'You Take Romance' and 'Little Rockin' Chair').

The simplest use of the E shape in Johnson's transcriptions is seen figure 12. 76: a characteristic slide up to the 6th degree followed by a turn around the tonic note.



Mr. Johnson's Blues, chorus 2. 7:1

Fig. 4-101. Johnson E shape cell a.

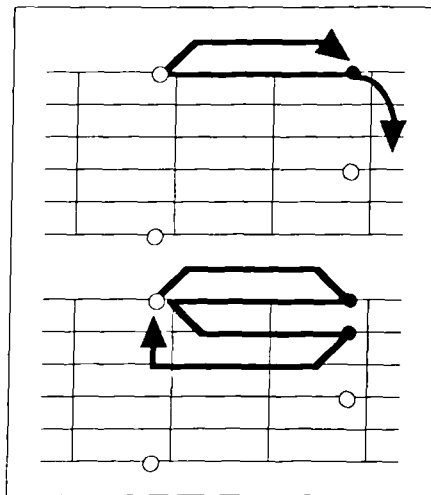
The 2nd degrees on the E string in 'Have To Change Keys to Play These Blues' chorus 1 are part of a two bar passage relative to the tonic E shape chord. But, as the motive appears in bars 5 and 6 against the sub-dominant chord, Johnson has changed position to where the underlying IV chord area is the A shape. The first

of these examples is a 'turnaround' the tonic note (5th of the sub-dominant chord) 5th - 6th - 5th - 3rd - 5th, and the second is the third statement of an ostinato which is varied in that in the first two statements the first tone, (2nd on the E string) which is the 6th of the underlying chord, is inflected to the $\flat 7$ th.

Some of Johnson's E shape cells have similarities with Walker's gestures particularly cell 14d.

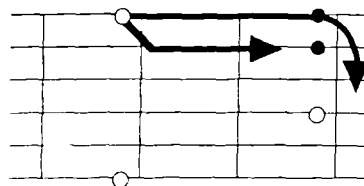
4. 9. 1. Inflected 2nd on the E string

Figs. 4-102 - 4-105 show the use of the inflected 2nd on the E string, a blue 3rd which occurs 11 times, all of which are in the early period in 'Have to Change Keys'., chorus 1, 'Blue Guitars', chorus 1, and 'Blue Guitars', chorus 4.



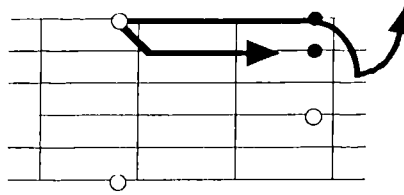
Have to Change Keys., chorus 1. 4:3

Fig. 4-102. Johnson E shape cell b.



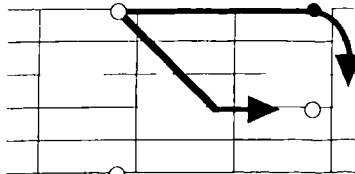
Have to Change Keys., chorus 1. 5:4

Fig. 4-103. Johnson E shape cell c.



Blue Guitars, chorus 4. 8:1

Fig. 4-104. Johnson E shape cell d.



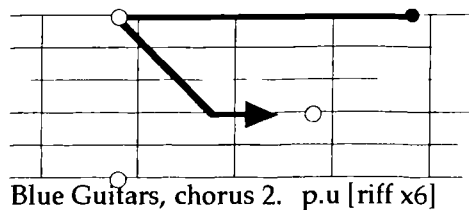
Blue Guitars, chorus 1. p.u.[riff x3]

Fig. 4-105. Johnson E shape cell e.

All motives are against the tonic chord at the E shape, and all of the examples resolve back on to the tonic note.

4. 9. 2. Neutral 3rd on the E string.

One tone occurs ten times in the period A, but does not occur in period B. All of the incidents are in the opening 8 bars of 'Blue Guitars', chorus 2 (fig. 4-106). They are a component of a riff that is melodic/thematic, and that has been developed from the first chorus (fig. 4-105). The fretted tone is slightly inflected, so that it is not the minor third, but a neutral, or blue third. It is unusual for Johnson to use this stark example of a blue note, which is, nonetheless, very common in other blues performers. Because of Johnson's grounding in New Orleans he is much more of a tonal player, in the context of jazz tonality, whose use of blues elements, blue notes and the 12-bar form, are closely allied to that of jazz usage. In Johnson's performance the use of blue notes is often subtle, with the blue-note resolving, or used as a passing or auxiliary note.



Blue Guitars, chorus 2. p.u [riff x6]

Fig. 4-106. Johnson E shape cell f.

These cells show Johnson's knowledge of the E shape in its blues context. It must be assumed that his rare use of it is based on aesthetic decision.

4. 9. 3. #5th on the B string, 4th on the G string

In the period 1925 - 1929 two tones occur only once each:

- #5th on the B string
- 4th on the G string

#5th on the B string occurs in a riff with variation at bar 4:4 of 'Blue Guitars', chorus 2. Its metric position at the end of bar 4 indicates that it is a preparation for the sub-dominant chord in the ensuing bar. Johnson is probably considering it as the neutral 3rd of the sub-dominant chord (fig. 4-107).

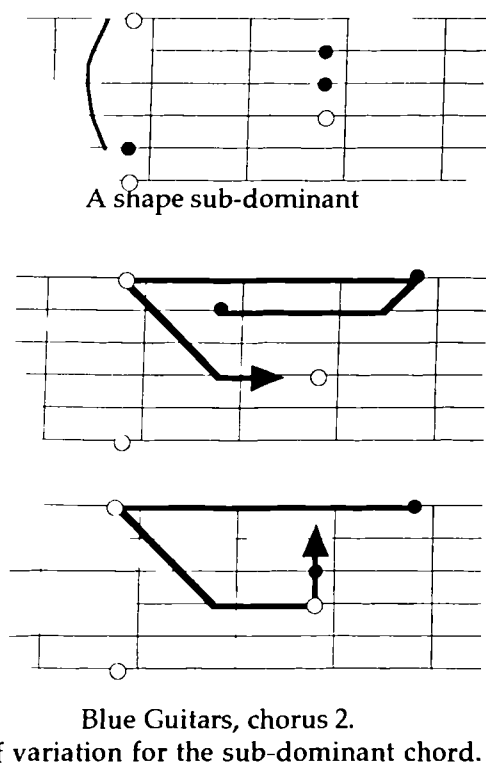


Fig. 4-107. Johnson E shape cell g.

The 4th on the G string also occurs in 'Blue Guitars', chorus 2. It is an element of the same riff as that mentioned above, on the sub-dominant chord, of which it is the root. Johnson appears to be visualising an underlying A shape of the sub-dominant chord at the 10th fret in these 2 bars.

Thus two unique tones occur in the same period A solo. During the opening 8 bars the performer is exploring a riff figure relative to the tonic E shape, an area that

he does not frequently employ, unlike many other blues improvisers. Figure 4-106 illustrates this. Figure 4-107 shows the variation to the riff to accommodate the harmonic change from tonic to sub-dominant A shape chord by the addition of the incidental tones discussed above. These additional tones emphasise the change of chord.

4. 9. 4. Root note on the D string.

The root on the D string occurs 16 times in period A. All of these incidents are in the riff-type thematic material of the opening two choruses of 'Blue Guitars' (seen above). This thematic material lasts for three bars in the first chorus and eight bars of the second. Apart from the increased repetition the intensity is heightened in the second chorus by the use of the \flat 3rd slightly inflected, intensifying the blues effect. The thirteen repetitions of this tone in the eight times stated riff are unique in Johnson's transcribed output.

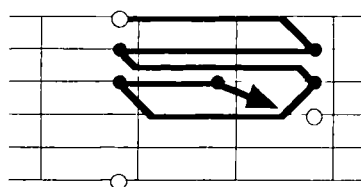
4. 9. 5. E Shape Cadence

In period B the use of the E shape for cadential figures in 'You Take Romance' and 'Little Rockin' Chair' gives rise to six tones that occur as incidentals twice each. These are:

- Root on the E string
- 5th and 6th on the B string
- \sharp 2nd, 3rd and 4th on the G string

The root on the D string through triple repetitions in each of the two motives is articulated a total of six times and is an incidental tone.

These cadence figures (fig. 4-108), because they are located at the E shape chord form, have the greatest similarity with Walker's motives. They include Walker's gesture labelled 5b (but omitting the \flat 7th) and gesture 2b.ii.



You Take Romance. 11:2
 Little Rockin' Chair. 11:2

Fig. 4-108. Johnson E shape cell h.

It can be seen from the preceding two chapters that although similarly classified as 'blues' guitarists Johnson and Walker have styles that are at odds with one another, indeed there is very little that can be found to be similar in their improvisations. Furthermore the difference in their styles can, to a large degree, be traced to their different choice of fretboard position relative to the underlying tonic chord of the model. In the motivic structures that they devised both Johnson and Walker were influential on the guitarists that followed them. As he can be perceived to be an accomplished guitarist it must be assumed Johnson's lack of E chord form motives are due to artistic decision rather than technical limitation. From the few examples of Johnson's motives that use this area he appears to be comfortable with it. The cadence motives in fig. 108 are akin to those of the jazz player Charlie Christian in the resolution of dissonance, and a preference for the 9th and 6th degrees over the $\flat 3$ rd and $\flat 7$ th.

CHAPTER FIVE

CONSOLIDATION AND DEVELOPMENT

Four influential guitarists instigated the move towards the liberation of the guitar from the rhythm section by their innovations in the melodic lead guitar style. Two are considered jazz players and two considered blues players. Innovators on the acoustic guitar were Lonnie Johnson and Django Reinhardt, whereas on the electric guitar key figures are T-Bone Walker and Charlie Christian. The blues players Johnson and Walker have been examined here. With Johnson's playing it was found that, although working primarily within the blues idiom, much of his style is closer to jazz, which is hardly surprising from his New Orleans origins. Although considered a jazz player Christian's solo lines are infused with a blues sensibility, and Walker, who worked extensively in the blues idiom because that was where he could earn a living, was familiar with other styles of music. It was seen that these latter two players knew each other in their formative years in Texas.

In chapter 1.3.3. it was shown that Obrecht entitled an article "The Most Influential Blues Guitarist Ever? Lonnie Johnson" (1993a:48). If Johnson and Walker can be seen as pioneers, innovators and influential this chapter begins to suggest at the specific nature of their influence and at a direction for further research that is beyond the scope of this thesis.

In the development of the blues idiom there is a balance of tradition and innovation. It was suggested that the main influence on the Chicago blues style, where slide guitar and distorted sounds predominate, emanates from the Mississippi Delta, but that lead guitarists in that city, such as Pat Hare, were also familiar with other styles. In opposition to this the Memphis style, characterised as clean and modern, was described as a synthesis. The following chapter which examines one solo by Hubert Sumlin, a lead guitar soloist in Chicago with Howlin' Wolf's band, and one solo of B. B. King, a protagonist in the Memphis synthesis, is presented in order to assess the influence of Johnson and Walker on the development of later styles.

5. 1. Hubert Sumlin analysis: '300 lbs of Joy'.

Hubert Sumlin is a protagonist of the Chicago style of blues playing. It would be necessary to make a thorough analysis in order to fully appraise the Chicago style. The following is presented in order to ascertain any influence of Walker or Johnson on the Chicago blues style, but also to indicate some of the stylistic deviations that occur within the genre of blues. A recording has been selected by Howlin' Wolf (with Sumlin on lead guitar) one of the predominant influences on the Chicago style. For Floyd "... heavy metal... in spite of its current association with

white oriented rock, goes back to Howlin' Wolf's recordings in the early 1950s" (1995: 202)

A transcription of Sumlin's solo can be seen at volume two fig. 94. It can be discerned from volume two fig. 95 that, like Walker, Sumlin has elected to construct his improvisation from a group of tones that occur almost exclusively at the E position of the fretboard.

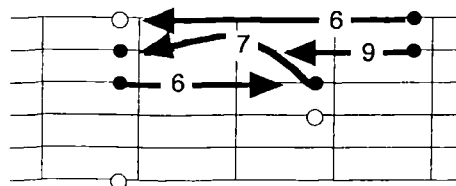
The principal tones form a pentatonic scale; Root - \flat 3rd - 4th - 5th - \flat 7th. From this it would appear that the Bailey and Driver's definition of the blues scale (1992: 64) may have been derived chiefly from the Chicago blues style. This would also be in agreement with Haralambos's definition of Chicago blues style as: "... playing minor notes against a major chord..." (1974: 32).

There is one sole articulation of the 2nd degree in the '300lbs of Joy' solo at bar 8:4, which indicates that the performer is familiar with the use of that tone but chooses, presumably for aesthetic or stylistic reasons, not to emphasize it. The complete scale is:

Root - 2nd - neutral 3rd - inflected neutral 3rd - 4th - inflected 4th - 5th - \flat 7th - inflected \flat 7th.

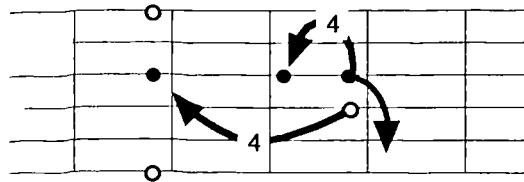
The style is closer to Walker's than Johnson's because of use of the scale position relative to the E shape. However, the performer omits the use of the 3rd or the 6th degrees as employed by both Walker and Johnson. Blue notes are thus left largely unresolved.

Figs. 5-1 and 5-2 show the prevalent movement patterns employed by Sumlin in '300lbs of Joy'. The gestures are followed, where applicable, by Walker's equivalent gesture.



- 1) 9 times = \flat 7th - 5th = Walker gesture 16
- 2) 7 times = 4th - 5th
- 3) 6 times = \flat 3rd - root = Walker gesture 26
- 4) 6 times = \flat 3rd - 4th = Walker gesture 4

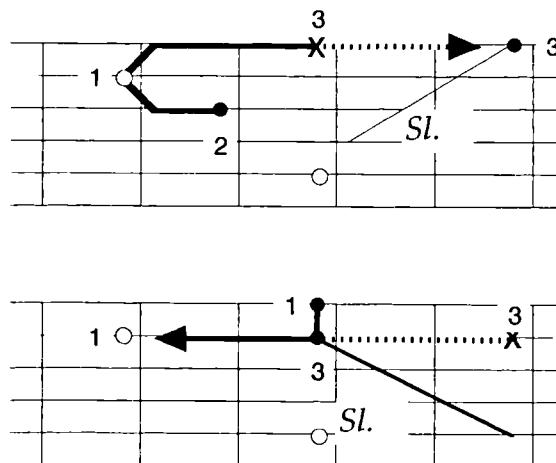
Fig. 5-1. Sumlin prevalent movement patterns a.



- 5) 4 times = root - b3rd = Walker gesture 1
 6) 4 times - infl. 4th - 4th - Walker gesture 22

Fig. 5-2. Sumlin prevalent movement patterns b.

Sumlin's opening phrase makes use of a slide between the E chord form position and its upper neighbour. This gesture has similarities with Johnson's oeuvre, but whereas Johnson moved between C and A positions, Sumlin moves between E and D positions. This is the first example in the transcriptions of the use of the D shape chord form. Comparable gestures are shown below. Figure 5-3 is taken from Johnson's 'Lazy Woman Blues' solo.



Lonnie Johnson.
 Lazy Woman Blues. 6:2. Cells A4 and B7

Fig. 5-3. Johnson C and A shape slide.

Fig. 5-4 is from the introduction of Sumlin's '300lbs of Joy' solo. In both examples a change of position is initiated by placing the 3rd finger at a fret location and sliding up two frets to the new position. A return to the original position is made by reversing the operation and sliding back down two frets on the lower adjacent string.

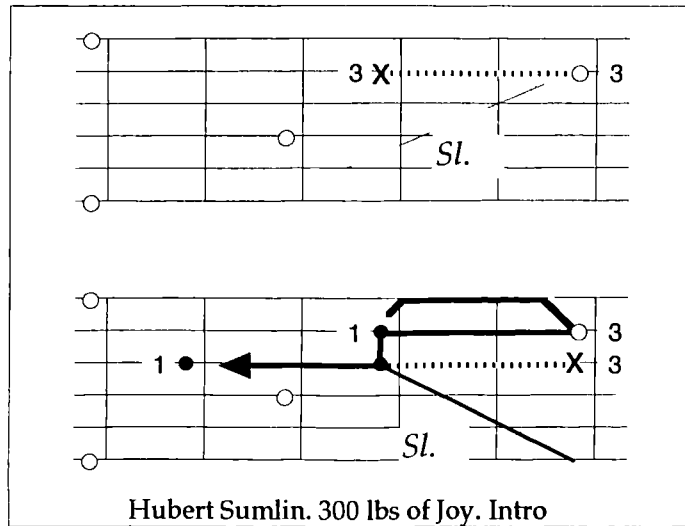
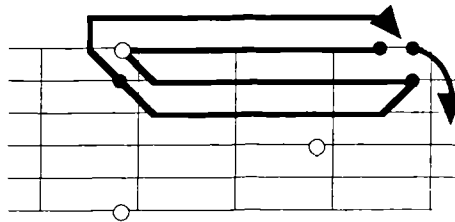


Fig. 5-4. Sumlin E and D shape slide.

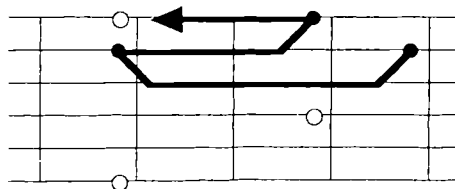
Although based on the E shape chordal area, gestures by Sumlin such as that at bar one, fig. 5-5 (which is repeated at bar two) appear unlike anything in the Walker transcriptions, largely because of the absence of 2nd or 6th degrees.



300 lbs of Joy. 1:2, 2:3

Fig. 5-5. Sumlin motive a.

Other gestures do display similarities. The four tone gesture shown as figure 15-6 is close to Walker's gestures because of the presence of the 2nd degree on the E string. The same four tone pattern can be found, for example, in *Stormy Monday* at bar 2:3.



300 lbs of Joy. 8:3

Fig. 5-6. Sumlin motive b.

Sumlin's cadential cell, fig. 5-7, extends a straight scalar descent pattern that Walker had used 21 years earlier, as seen in figure 13. 8.

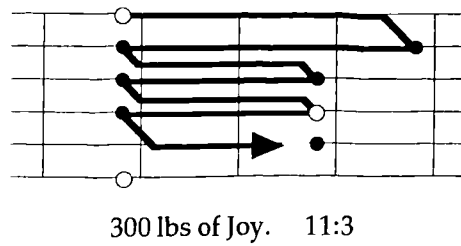


Fig. 5-7. Sumlin cadence figure.

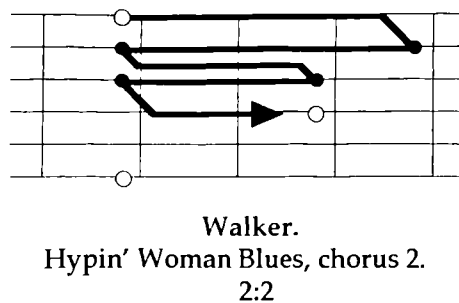


Fig. 5-8. Walker cadence figure.

Fig. 5-9 from '300 lbs of Joy' also occurs as cells 11b - 2a in Walkers output and is used in, for example 'I Got a Break Baby', chorus 1, bar 2:3, and 'Bobby Sox Blues', bar 6:4.

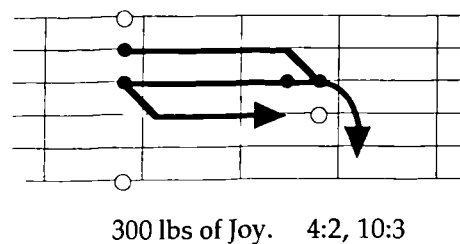


Fig. 5 9. Sumlin motive c.

5. 2. B. B. King analysis. 'Mistreated Woman' solo.

A thorough appreciation of B. B. King's improvisatory style, achieved by an analysis similar to those of Johnson and Walker above, is beyond the scope of this thesis. However, the following analysis of one of King's earliest recordings is presented in order to examine the specific nature of the influence of the fingered structures of Johnson and Walker on his style. Here elements drawn from both Johnson and Walker are combined together with King's own developments.

The transcription of 'Mistreated Woman' is in volume two fig. 96. It can be seen from the tone layout diagram in volume two fig. 97 that King has employed two positions for the construction of this solo: the E position and the C position. The former is favoured by Walker and the latter by Johnson.

From the principal tones a four tone scale is formed which does not contain any blue notes: Root - 3rd - 4th - 5th. Walker's principal tone scale included two blue notes, the neutral 3rd and the $\flat 7$ th, and Johnson's included the inflected 2nd (neutral 3rd). Blue notes occur in King's playing as secondary tones.

In the E chord shape position King's complete scale is:

Root - neutral 3rd - 3rd - 4th - inflected 4th - 5th - 6th - root.

By comparing this to Walker's scale it can be seen that King has omitted the $\flat 7$ th degree in this particular solo.

In the C chord shape position King employs the following scale:

6th - Root - inflected 2nd - 3rd - 4th - inflected 4th - $\sharp 4$ th - 5th.

As in Johnson's performance practice King, in this solo, concludes with two cadential figures; the first ends on the tonic note at the return to the tonic chord at bar 10, the second fills bar 11 and concludes on the tonic note at the beginning of bar 12. In the solo a consequent phrase, descending to the dominant note on the arrival of the dominant chord, is in preparation for the next twelve bar chorus. King's predominant movement patterns are shown on figure 14. 1.

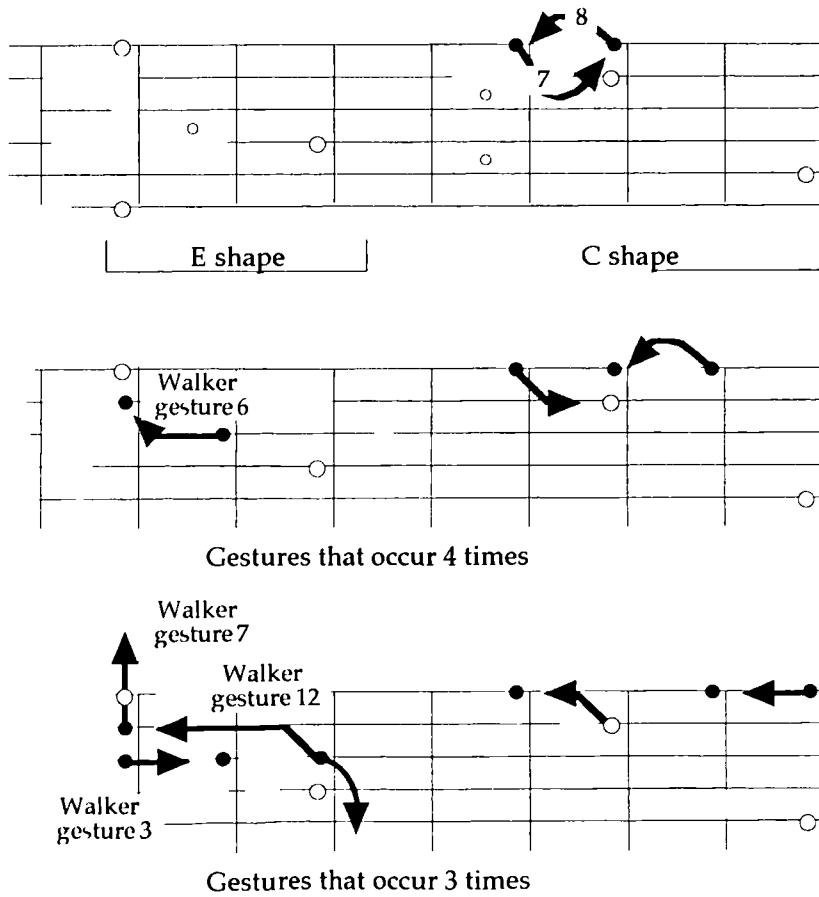


Fig. 5-10. King prevalent movement patterns.

5. 2. 1. Principal Tones.

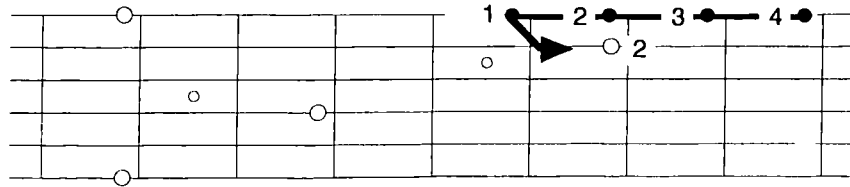
There are five principal tones presented in the following chart.

Tone	String	Number of occurrences.
Root	B	23
5th	E	19
3rd	E	14
5th	B	14
4th	E	12

Fig. 5-11. Principal tones.

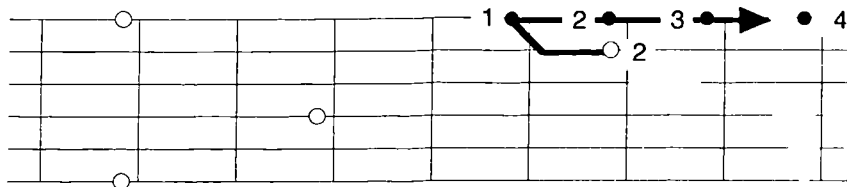
Only one of these, the 5th on the B string, occurs at the E position. This tone is also Walker's most commonly sounded tone. In the C position King's pre-eminent tone, like that of Johnson, is the root note on the B string. King, unlike Johnson puts greater emphasis on the 3rd degree on the E string. The tone only occurred twice in

Johnson's complete output under analysis. It can be seen that in the opening six bars of the improvisation King has placed his second finger on the root note, whereas Johnson used his index finger. This facilitates chromatic ascent and descent movement patterns on the top E string, as seen on figures 5-12 and 5-13.



Mistreated Woman. 1:1

Fig. 5-12. King motive a.



Mistreated Woman. 2:4

Fig. 5-13. King motive b.

The use of repeated tones in the opening bar is similar to that of Lonnie Johnson in 'When You Feel Low Down', 'Little Rockin' Chair' and 'You Take Romance'. In those solos Johnson repeated the root note on the E string, whereas King repeats the 5th on the E string. Five solos in the Walker transcriptions open with a repeated neutral third: 'T-Bone Jumps Again', chorus 2, 'T-Bone Shuffle', chorus 2, 'Too Much Trouble', chorus 2, and 'On Your Way Blues'. Johnson uses a similar opening in two solos: 'Nothing But Trouble' and 'I Can't Sleep Anymore'.

5. 2. 2. Secondary Tones.

Seven tones occur as secondary tones are presented in the following chart.

Tone	String	Number of occurrences
3rd	G string	6
Root note	E string	5
#4th	E string	5
Inflected 4th	G string	3
Neutral 3rd	G string	3
5th	A string	2
4th	G string	2

Fig. 5-14. Secondary tones.

The inflected 4th degree on the G string occurs three times all in bar 9 against the dominant chord in a riff figure that also occurs in the improvisatory practice of T-Bone Walker. The Walker riff (gesture 12) occurs in 'I Got a Break Baby', chorus 2, and 'Hypin' Woman Blues', chorus 1.

The neutral 3rd on the G string, occurring three times in the second cadential figure, resolves by step up to the 3rd degree. This sort of resolution can be seen in Walker's arpeggio based motives and other #2nd - 3rd resolutions and has similarities with the E shape cadences that occur in two of the Johnson transcriptions: 'You Take Romance', and 'Little Rockin' Chair'.

The 5th on the A string occurs as a repeated tone at the end of the solo at bar 12:2. It is the final tone at the end of the cadential figure as the harmony shifts to the dominant chord in preparation for the ensuing twelve bar sequence.

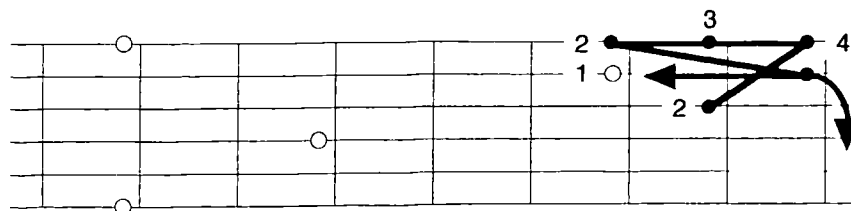
The 4th on the G string occurs twice. Both of these are in the tonic chord motives. Both of the tones resolve by descent back onto the 3rd degree. In the second example the resolution is preceded by the #2nd.

5. 2. 3. Incidental tones.

Five tones occur only once each. These are:

- Root note on the D string.
- 6th degree on the B string.
- 6th degree on the G string.
- Inflected 4th on the E string.
- Inflected 2nd on the B string.

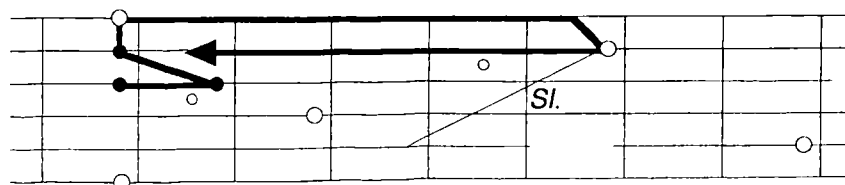
The 6th degree on the B string occurs at the opening of bar 10 on the arrival of the sub-dominant chord. King slides up to the tone as he changes position from the E to the C position. It is the first tone in a passage that is derived from Johnson's *x* series of motives. The 'Mistreated Woman' version of this motive (fig. 5-15) is most similar to the Johnson motive labelled *x2* from 'When You Feel Lowdown' (recorded in 1942)



Mistreated Woman. 10:1

Fig. 5-15. King *x* motive.

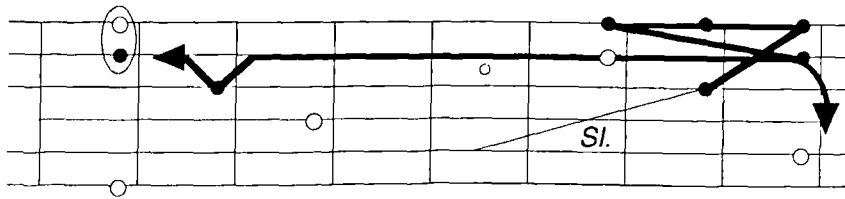
Certain other motives appear that are identical to those of Walker. The solo opens with Walker's gesture 17a. Walker's motive 2b.ii occurs at bar 11:3. Other gestures show fingered structures that are related to those of Walker, but developed by King in a new manner. Fig. 5-16 is similar to Walker's motive shown in volume two fig. 91-6, but here it is coupled with a glissando, derived from Johnson, up to a tone in the C position.



Mistreated Woman. 8:2, 11:2

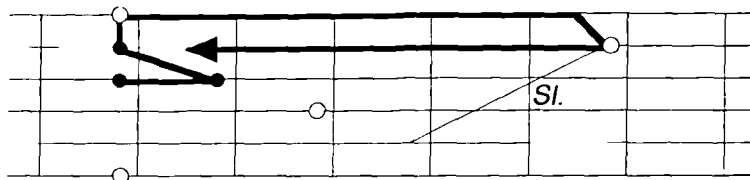
Fig. 5-16. King motive c.

King has also incorporated Johnson's idea of two cadence patterns. These are shown below at fig. 5-17 and 5-18. Cadence one incorporates an x motive derived from Johnson but cadence two gestures are closer to Walker's.



Mistreated Woman. 10:1

Fig. 5-17. Cadence one.



Mistreated Woman. 11:2

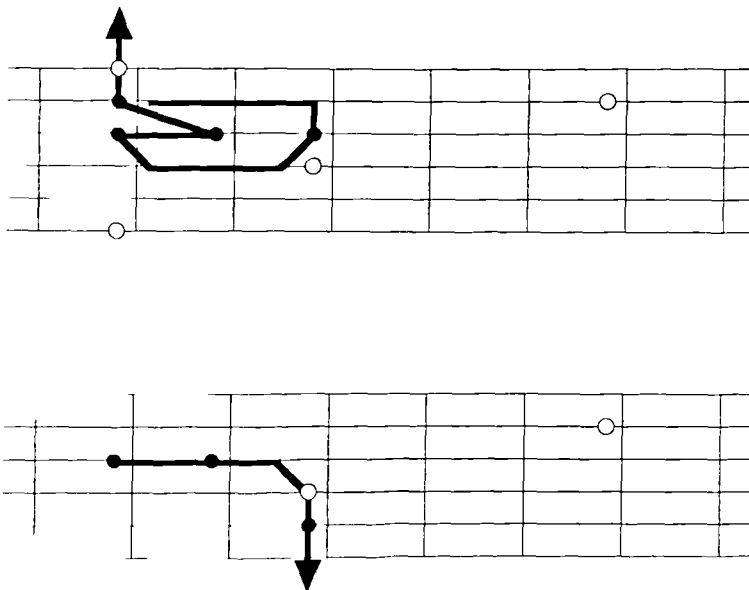


Fig. 5-18. Cadence two.

The Chicago lead guitarists arguably came under the influence of Walker in adopting the electric guitar, and the E chord form as the underlying area for their improvisations. In Chicago they reduced the number of tones in the scale leaving more unresolved blue notes in keeping with the characteristic raw, distorted sound. It

would seem probable that the common definition of blues scale in guitar texts is derived from the Chicago style.

If the Memphis blues style is a synthesis it would seem that, for the lead guitar style at least, that synthesis combined the specific fingering gestures of Johnson with those of Walker. King, the protagonist of the Memphis style, has always credited Johnson and Walker as prime influences on his style. In the one early solo examined here the combination of E and C shape forms was clear, along with smaller motive forms that are derived from the earlier performers. Already in this early solo it can be seen that King is taking ideas but developing them further, adding his own technique and style into the mix. King's influence is central to the blues idiom because, as was stated earlier, King took elements from Walker and Johnson, coupled them with his own, then "exported that sound to the world:.(Guralnick 1982: 114)

One further example is provided at volume two fig. 98. Cell 12a was identified in the improvisations of, and was most probably devised by Walker, has become a stock phrase of rock guitar. Volume two fig. 98 presents some of the variety of rock extensions of the motive.

- Mick Ronson uses Walker's gesture 12a unadorned in a thirteen times repeated riff in the David Bowie recording of 'The Jean Genie', fig. 98-1
- Both Eric Clapton and Jimi Hendrix complete the gesture with an inflection of the flattened 7th degree, as seen in fig. 98-2.
- In figs. 98-5, 98-6 and 98-9 the guitarists Jimi Hendrix, Richie Blackmore and Jeff Beck combine two gestures that are comparable to those of Walker. The Walker cell labelled 12a is followed by a descent to the root note that includes the flattened 5th. The descent in the Blackmore example is identical to Walker fig. 93-4.

These examples show that the pervasiveness and endurance of Walker's motives continued beyond Chicago and Memphis of the 1950s and 1960s and into the rock idiom.

CHAPTER SIX

CONCLUSION

This thesis has considered, as an improvisational form, the invention of new melodic material on the guitar within the blues genre. An improvised performance is impacted by various factors, an examination of which facilitates a deeper comprehension of the improvisational process. These factors include:

- Context: history, geography, and cultural and stylistic models.
- The instrument: design, development and physical layout.
- Physical aspects of the human form.
- The input of innovative artists within a genre; their technique and aesthetic decision.

Improvisation takes place in relation to a musical model, which may be a compositional form or a mode with characteristic melodic contours. In this thesis melodic improvisation on a blues form has been examined. The model is a twelve bar form with a harmonic structure comprising the tonic, sub-dominant and dominant chords. The harmonic structure was seen to be an influence on the melodic line.

Music occurs in time and space and it has been shown that geographical location and historical placement are not without effect on performance practise. New musical styles evolved in the United States through the syncretism of different cultures, especially European and African. Kubik emphasised that blues evolved on American (and not African) soil, saying that: "...the "birthplace" of the blues is in the United States, and the "birthdate" in the 1890s." (1999: 49).

If blues was initially associated with rural areas of the deep South, the form was disseminated, and diverse regional styles evolved in the Mississippi Delta, Texas and the Eastern coastal states, Chicago and Memphis. In rural blues, a style predominantly performed by an individual, melodic material is presented by the voice, with the guitar used primarily for accompaniment. Urban blues styles arose, notably in the cities of Kansas City, Memphis and Chicago. A feature of Chicago blues is the electrification of elements drawn from Delta styles, notably in the use of drones, bottleneck and repeated melodic figures. If the stylistic elements of the Chicago blues were derived mainly from the Delta, it was suggested that the lead guitarists in that city may have drawn influence from elsewhere; Pat Hare, for example, who played in Muddy Waters band in Chicago, had also worked as a session player in Memphis. A modern electric blues style, relatively uninfluenced by Delta blues, that evolved in Texas incorporates elements drawn from blues and jazz. The Memphis style was shown to be a synthesis that comprises elements derived from the Delta, Texas and jazz.

The analysis examines melodic material presented by the performer in the course of a guitar solo: a section of a piece played by an ensemble where the guitarist improvises on the instrument in a single string melodic manner. If in the Delta blues style the guitar was used to accompany the voice, it may be necessary to look elsewhere for the inception of a single string instrumental manner of improvisation.

Turn of the nineteenth century New Orleans was a cultural melting pot that was historically significant in the development of new musical genres. It is generally accepted that jazz, incorporating blues elements and improvisation as vital ingredients, emerged there. Blues elements were probably brought to the city by itinerant blues guitarists performing in the streets. It was also here, in the 1920s, that the first great guitar soloist emerged. By the mid-1930s a handful of guitarists described trying to improvise in 'horn-like' lines and, from contemporary descriptions, this appears to be a novel musical concept. Lonnie Johnson was already recording elaborate single string melodic solos as early as 1925 and it seems, from contemporary accounts, that he was the first to do so. He was described by Jazz bass player Pops Foster, who had heard Johnson playing with a string band in the streets of New Orleans before 1917, as ... "the only guy we had around New Orleans who could play jazz guitar" (Shaw 1987: 13). It seems plausible that Johnson would have initiated a single string, horn-like melodic manner of playing in imitation of the jazz horn players that he would have been exposed to through his New Orleans origins.

For Kubik "One charismatic personality will suffice to release a chain reaction. One virtuoso musician can end up being imitated by hundreds" (1999: 13). The vast influence of Johnson is acknowledged by many subsequent guitarists and, because of this, Obrecht referred to Johnson as; "The Most Influential Blues Guitarist Ever?" (1993a:48). It would take some means to disseminate the style that Johnson had evolved and that happened through his extensive travelling and, more especially, through his large numbers of recordings. Some commentators have regarded urban blues styles as an evolution from country blues, however it would appear that what Johnson was developing was quite separate from country blues. Furthermore Johnson was recording some years before rural blues were beginning to be recorded, and his style is already that of a mature soloist. It was seen that Johnson's influence transcended urban blues styles; the country blues guitarist Robert Johnson also imitated him.

The twelve bar blues and blues elements (the blue note) emerged from the syncretism between black and white cultures that occurred in the United States around the turn of the nineteenth century, in particular African derived elements were adapted within the European harmonic system. Blues elements had their origins in the displacement of black people in a different cultural setting. Furthermore blues was a code for the black condition and, for Floyd, is infused with a cultural memory;

“... a repository of meanings that comprise the subjective knowledge of a people, its immanent thoughts, its structures, and its practices...” (1995: 8).

But Floyd also believes that cultural memory is “not racially exclusive” and so could be absorbed by white musicians enabling them to participate in blues and jazz idioms (1995:140), so that eventually white guitarists playing in the idiom, notably Mike Bloomfield, Stevie Ray Vaughan and even English middle class white musicians such as Eric Clapton, gained the respect of black performers. Blues was adopted by white musicians and also transformed in to rhythm and blues, rock’n’roll and rock music.

For Oliver “One of the many factors which influenced the character of the blues was the popularity of the guitar” (1969: 27). The evolution of the guitar itself has had vast repercussions on the music that is played on it. In the early years the guitarist struggled with a lack of volume especially when improvising in the context of a large ensemble. Early in the nineteenth century the advent of steel strings enabled the inflection of tones crucial for the neutral intervals of blues, and the design of the truss rod allowed for slimmer necks that made the instrument easier to play. But the major development that allowed the guitar to be fully liberated from the rhythm section was the invention, in the 1930s, of the electric guitar. Increased volume meant that the guitar could be played in a single string manner in a group context. A by-product of increased volume was increased sustain and the combination of these two facilitated the development of new techniques. The first guitar virtuosi on the electric instrument, both from Texas, were Charlie Christian and T Bone Walker.

The twin influence of Johnson and Walker on blues idioms, and also on later rock guitar styles, is vast. Walker’s influence can be discerned on the lead guitarists in Chicago, and the combined influence of Walker and Johnson is found in the Memphis synthesis. The specific nature of these influences can be seen in the protagonist of that style; B. B. King. King, who has always credited Johnson and Walker as prime influences, in the words of Guralnick “exported that sound to the world”. (1982: 114)

This research suggests that the relationship between human movement and the physical layout of an instrument is a vital component in the creation of musical improvisation. The guitar fretboard is an interface between musician and music. The artist’s conception is given an auditory outcome through the physical act of making music. Aspects which contribute to the creation of an instrumental performance are the visual, the tactile, the kinaesthetic and the proprioceptive. The layout of scalar material and melodic patterns can be perceived visually by the performer on the instrument. Russell suggested that: “Visual images are generally much better

remembered than words. So much so that visual recognition is practically perfect” (1979: 114).

It was suggested that a consideration of these aspects in relation to improvisation leads to a deeper understanding of the musical genre and the creative impulse. The structure of an improvised performance is effected by the practised fingering strategies of the musician. The guitarist improvises by bringing some combination of left hand fingers into contact with the six strings of the guitar at particular fret locations. The guitar is a particularly visual instrument with the frets and the strings forming a grid. In order to display the interrelationship between the left hand fingers of the performer and the fretboard a form of graphic notation was devised which presents the data derived from blues guitar solo transcriptions as it appears on the instrument.

Each musician has at his fingertips unique movement patterns on the instrument that constitute his individual style, but also a knowledge of a body of gestures which are the lingua franca of a genre. It is hoped that this thesis has gone some way to show that in order to make a musical analysis of value, especially the analysis of improvisation, it is essential to consider the interaction between the musician and the musical instrument, and then to view this interaction within its historical and cultural background.

A scale is a “theoretical construct” (Nettl 1974: 12) which can be used as a tool to aid in the description of a music, the tabulation of a scale is a consequent to the actual practice of music making. The reduction of an improvisation to a scale of the tones is of limited use as an aid to defining and explaining the style of an individual performer, or of a musical genre. A scale is not the music, anymore than the map is the territory. The value of these abstractions in the analysis of non-Western music is particularly debatable. It was seen that in some pedagogic texts and certain styles of music that great emphasis is placed on scale proficiency, but, conversely, some practising musicians displayed little knowledge of scale theory. Reinhardt, despite the fact that he used scale fragments in his melodic improvisations, reputedly asked the violinist Grappelli; “A scale, what is a scale?” (Hofer 1966: 21). However, it is incorrect to assume that musicians working within an oral tradition are musically illiterate; Johnson, who claimed that he taught himself to read and write both language and music, told Wilmer “I know a lot about music” (1963: 6).

It was seen that the term mode can transcend that of scale. Mode implies a scale whose tones are subject to a hierarchy and may also be defined by characteristic melodic types. In the classical music of India the concept of mode is an underlying principle that forms the basis of improvisational practice. Shankar describes the term *rag* as: “... the melodic basis of Indian classical music on which

the musicians improvise. Each *raga* has definite melodic qualities that distinguish it from all other *ragas*" (1968: 157). *Rag* "includes particular melodic phrases and expectations (especially cadence formulas)... " (Dowling and Harwood 1986: 118). This may indicate a degree of expectation as to the manner in which a specific tone may behave. A tone may be, in jazz parlance, a 'tendency tone' that is one that resolves predictably.

Furthermore, traditionally in India, idiomatic melodic material is learned as specific physical movement patterns by the student directly from the teacher. In a parallel to this Russell has said that, when in his teens, the jazz saxophonist Charlie Parker emulated Lester Young: "He had to see how jazzmen held their horns, worked their embouchures... used their fingers, and how they breathed" (1988: 44). Still in his teens Parker would visit a club where he would hide in the balcony and "... remove his own horn from its case... and place his fingers on the keys. The reed would be in his mouth but no sound would come out. Charlie wasn't putting any air into the horn. He was playing along with Lester only in his head, his fingers moving on the keys the way Lester's fingers moved..." (56). Here the sonic outcome is a direct consequence of a copied motor event.

The blue note is a vital ingredient of both jazz and blues. This thesis did not set out to examine the diverse theories that have grown up with regard to the origins and definition of blue notes, but rather to examine the way that it is interpreted in the melodic single string guitar framework of two musicians who had already become acculturated in the United States and adopted some of the syncretised blues elements onto the guitar.

The blues scale is a theoretical construct that contains blue notes. However, it was shown that definitions of blues scale vary. Pass (1977: 22), Lucas (1978: 4) and Bailey and Driver present a pentatonic scale: "This scale could be configured as root, neutral third, fourth, fifth, and neutral seventh" (1992: 64). These tones would roughly correspond to C-E \flat -F-G-B \flat (relative to a C tonic). Eschete (1980: 48), Gamble (1989: 4) and Keller (1998: 83) add the flattened 5th (G \flat) to this pentatonic layout. Grigson suggests that: "It is perhaps best to regard the blues scale as consisting of two distinct pentatonic scales, the major and the minor, plus the flattened 5th as an important additional tone" (1988: 59). Thus he presents the blues scale as C-D-E \flat -E-F-F# G-A-B \flat . Robinson suggests that the blues scale as it is used in jazz comprises "the diatonic scale to which the inflected third, fifth, and seventh degrees may be added to impart a blues flavour" (1988a:120).

It was observed that to play the blues scale (in whatever definition we accept) in an ascent and descent pattern is not to play the blues, and it was suggested that in order to define the blues scale as a mode it is necessary to examine

the melodic basis derived from the performance practise of individual blues musicians.

The pitches of a melody can be divided in to smaller phrases variously termed formula, idea, figure, gesture, motif, (Kernfeld 1988a 558), motive (Schuller 1968, Owens 1974), cento (Randel 1986), *nome* (Ferretti 1934), lick (Witmer 1988), matrix (Van Der Merwe, 1992), cell, fragment, and even 'tool kit' (Reck). A motive is defined as a short, complete, rhythmic, harmonic or melodic idea which retains a distinct identity, even when it is subject to some form of elaboration. Long motivic forms may be sub-divisible into cells. Motives are associated with particular fingering patterns on the instrument on which they are conceived. Wilmer has suggested that "a common stock of licks is in circulation" (1988: 41) that help to define a particular style. Owens, in his thorough analysis of Parker, observes that "The mix of familiar motives is always different and some phrases, or portions of phrases, are always unfamiliar" (1974a: 35) and later states that "no two choruses are exactly alike" (1974b: 167). Because improvisation is a living form identical melodic material in musical phrases is rare. There is a moment of creativity when the performer makes a novel gesture producing a different end result. Whereas one cannot know for certain, in the analysis of recordings, that one is listening to the inception of a novel action, it can be shown that differences in performance practice occur over time as old movement strategies fall out of favour, and new ones replace them. A recording is a snapshot of the performer's style in time.

Complete motives, then are rarely seen to be identical. Much is familiar, and yet details often differ. Thus to catalogue the motives in the performer's output would mean constructing a separate diagram for practically every phrase. We need not disagree with the use of the term motive, however, these alterations or elaborations suggest that a term such as *cento*, implying that set of melodic structures are constructed from pre-fabricated 'building blocks' brought together in the manner of a patchwork, might be considered to be erroneous. These differences, when isolated, call into question the notion of a performer's 'motivic stock'. Terms such as these ignore the vitality of improvisation as a performance art and consider improvisation to be an a priori structure.

Analysis in this thesis took the form of reduction followed by expansion. Reduction proceeds from a complete transcription to the individual tone. A solo was transcribed in both traditional notation and guitar tablature, the latter showing the precise location on the fretboard at which a tone is produced, and thus reflects the fingering strategies of the performer. The transcriptions were then subject to various analytical processes. Tone counts, showing the full range and location of tones on the instrument, were made for each solo and the data represented on graphic fretboard notation. This facilitated a comparison of the tonal material used in different solos by the same performer, but also between the solos of different performers. The tone

counts, subjected to a measurement process in order to discern a modal hierarchy, were sub-divided in to: principal, secondary and incidental tones. Principal tones throughout the solos were then reduced to one octave to examine the scale derived from the improvisations.

The expansion process proceeds from the single tone to the motive. In the course of improvisation, because music is a temporal activity, one tone is followed by another. From a tone the performer, by left hand gestural activity, proceeds to a second 'destination' tone'. Questions the analyst needs to ask are: from a given tone which tone follows? how is it achieved? and why has the improviser elected to play that tone? Each single tone forms a spring board from which the performer can pursue a number of different pathways. Movement strategies between tones are practised so that the performer may take a different course of action at any event. There were seen to be many possible destination tones from a given tone, but a few prevailed. Pathways through a group of tones may vary some may be what are termed in jazz parlance tendency tones, that is those tend to resolve in a particular manner, as, for example, the #4th - 5th. From other tones the performer may have practised options of several different destinations. It was seen that Johnson had an average of eleven destinations from his principal tones, and Walker eight; a statistic that in itself tells us something about the performance practice of the two artists. Each single tone is, by analogy, a seed that can germinate into a musical phrase; from each individual tone a different growth pattern can be attained, like different branches grown from the same stem.

Sundberg and Lindblom suggested that: "The reason why statistical methods have been more rarely used in recent analyses of musical styles is probably associated with the realisation that probabilities cannot be used for explaining musical facts... Probabilities describe rather than explain." (1991: 265) Statistical methodology is used here to catalogue elements of improvisation, explanation for which is found in the gestural activity. Sundberg and Lindblom also observe that, "A characteristic of language is that it uses a finite number of rules to produce an infinite set of sentences" (1991: 248). In this analysis the performer's gestural activity forms the finite number of rules, that is, what is physically possible with the left hand fingers. The end result is an infinite variety of phrases within the improvisation of an individual performer.

By mapping progressions of consecutive tones it was possible to identify smaller motivic structures which were termed cells. These cells were designed to examine the behaviour of tones in context, sub-divide and classify gestural activity derived from the melodic solos into smaller units. It might be predicted from the predominant destination tones that if the performer began on a particular tone, there is a probability that he will proceed to a second tone via a particular interval, and having sounded a second tone, he would proceed from that in a particular manner.

A three tone cell is the result. A combined series of gestures was termed a cell and a number of cells were identified for each performer representing patterns of movement on the instrument. The cells were seen to be different between the two different performers. Walker generally uses less cells more frequently than Johnson.

The repetition of cells shows the characteristic movement strategies of a performer, and forms a model of their improvisational practise. Cells show the predominant pathways that a performer takes through a series of tones. From any one tone the choice of the following tone effects the pathway of an improvisation. The performer's corpus of 'licks' are not set in stone.

Cells are then adjoined together to form longer motivic groups. These motivic groups were identified for each performer.

The analysis provides a comparison of the blues scale in theory as derived from actual performance practice. The hierarchical reduction revealed that for Johnson blues scale predominantly comprised the following tones:

- Root - 2nd - inflected (neutral) 3rd - 3rd - 5th - 6th - octave.

Johnson's blues sensibility seems to be in accord with Robinson's (1988a:120) suggestion that blues notes in jazz are added to the diatonic scale. This may be unsurprising considering Johnson's New Orleans background.

Walker's reduced scale of principal tones was:

- Root - \flat 3rd - 4th - inflected 4th - 5th - 6th - inflected 6th - \flat 7th - octave.

Walker's blues scale was seen to be closer to Grigson's definition of "two distinct pentatonic scales, the major and the minor, plus the flattened 5th as an important additional tone"(1988: 59).

The physical size of the fretboard of the guitar is such that the four fingers of the left hand fall conveniently one to each fret; thus a four fret span can be covered without a change of position. A difference in scalar material comes about because, as was discerned from the fretboard notation, the two guitarists elected to base their improvisations in different regions of the guitar relative to the key of the improvisation. Because Walker's improvisations are characteristically undertaken above the E shape chord form, and Johnson's improvisations combine C and A shape forms different tones fall conveniently beneath the fingers of the two performers.

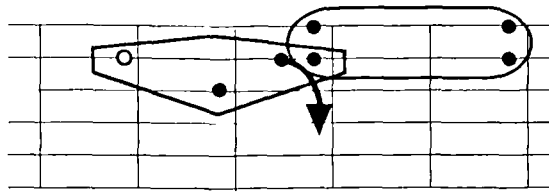


Fig. 6-1. Fretboard notation of Johnson's principal tone layout.

It can be seen from figure 6-1 that Johnson's improvisatory technique comprises a seven-tone component located in two adjacent areas of the fretboard. These two areas, underlying the C and A chord forms respectively, are fundamental to the improvisational technique of Johnson. It was shown that the use of these positions forms a skeletal framework that underpins the melodic character of his improvisations, and, furthermore, it is through his artistic choice to use these areas that his playing differs from that of his contemporaries. It was also seen that the specific nature of Johnson's influence, through B. B. King to the Memphis synthesis and beyond to rock music, can be traced to the melodic resources that he originated at this fretboard location.

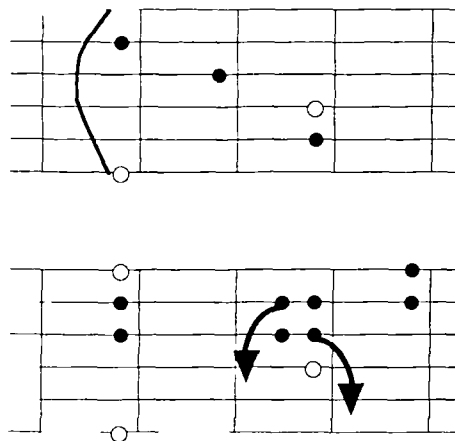


Fig. 6-2. Walkers ten-tone finger component relative to the E chord form.

Conversely it is shown on figure 6-2 that Walker favours a ten tone framework on which he bases his improvisations relative to the E chord form.

Johnson and Walker present different melodic styles in their improvisations even though both are labelled blues players. By comparing fig. 6-1 with fig. 6-2 it can be seen that the two players frame their solos in differing areas of the fretboard. Left hand gestures were presented hierarchically for the two players and it was found that in both cases left hand alternating motion between fingers one and three predominated. The left hand index finger is anchored at a fret location and much

melodic material is created by alternating fingers two, three or four against finger one. Johnson favoured two main anchor points; the root note on the B string at the C chord form and, two frets higher, the 5th on the E string at the A chord form. Johnson's gestural activity was thus sub-divided into C and A form gestures and gestures that bridge C and A forms. In contrast to this the main anchor point that Walker elects to use for his index finger is the 5th on the B string relative to the E chord form; he then utilises a combination of tones in his solos with fingers two, three or four, in such typical left-hand fingering 'toggle' gestures as 1 - 3 - 1, from two or three frets above this point. The artistic decision to use these areas has repercussions on the two performers' styles. Style is thus effected by the physical properties of the instrument and Spatio-motor considerations.

Cells are joined together to form longer motivic structures. It was found that in Johnson's improvisations there are a series of gestures that occur in response to the underlying harmony of the model. Motives occur, with variation, for each of the I, IV and V chords of the model.

Exact repetition is more common in Walker's playing than Johnson's. Walker tends to use less cells with greater frequency than Johnson in whose playing there is more variation in the motivic structures.

Fundamental differences between melodic material presented by the two performers can be seen by the sub-divisions into motivic groups. Five specific groups of recurrent characteristic melodic phrase types were isolated in Johnson's improvisations, they are as follows:

- The *x* motive
- Harmonic motives
- Octave leap on the dominant note
- Repeated tones
- The riff

Other motivic groups in Johnson's output were:

- C shape motives
- A shape motives
- Motives that bridge C and A shapes

Unlike Johnson, Walker makes infrequent use of arpeggio based harmonic motives in response to the underlying IV and V chords of the model. There are only three classifications of isolated melodic phrase types here:

- Harmonic motives,

- The riff
- Repeated tones.

Other motivic groups in Walker's output were:

- Motives that used the minor pentatonic 'blues scale' exclusively
- Motives that contained a #2nd - 3rd resolution
- Mixed pentatonic and blues pentatonic motives

Similarities and differences between left hand activity in Johnson and Walker are presented in the following diagrams (figures 6-3 and 6-4).

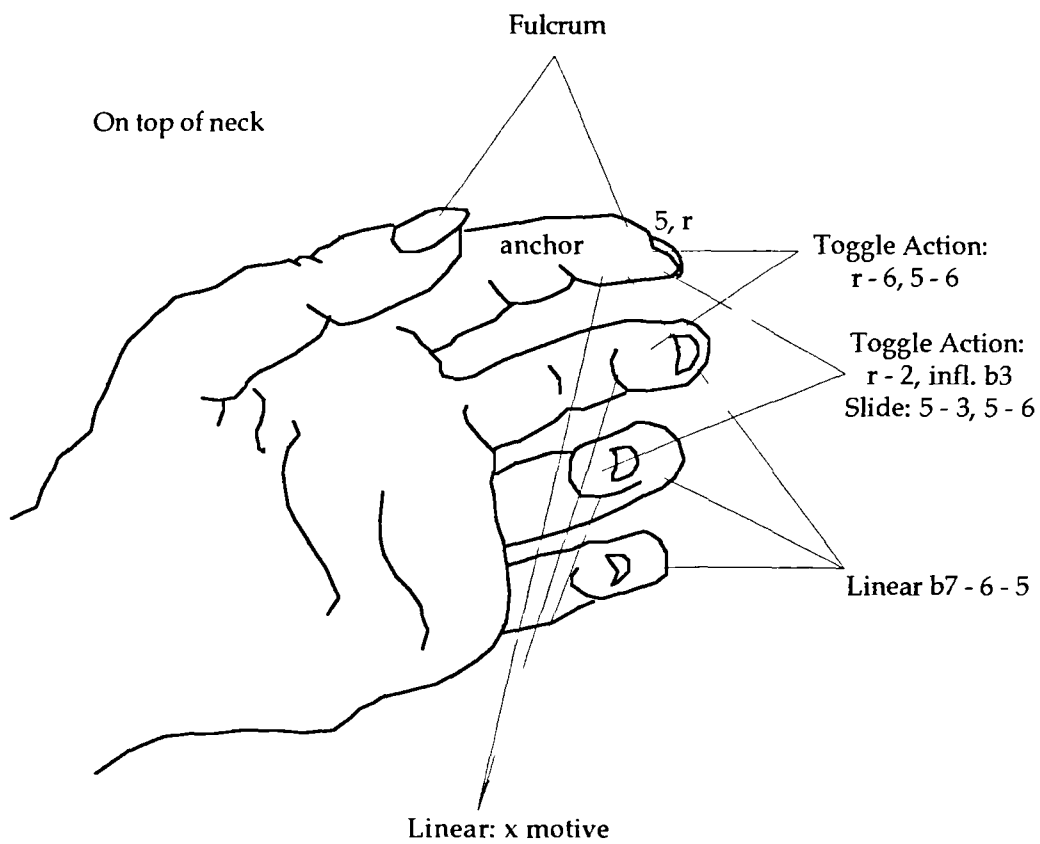


Fig. 6-3. Johnson left hand activity.

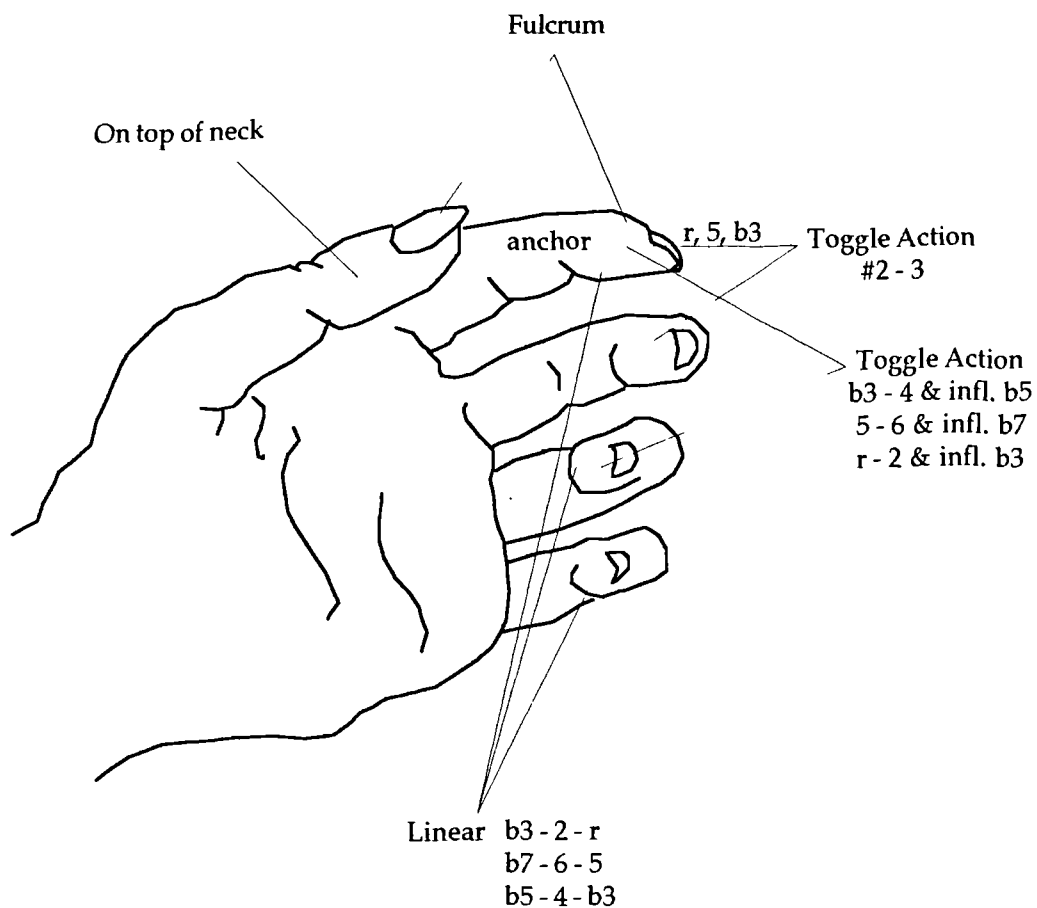


Fig. 6-4. Walker left hand activity.

It can be seen that fundamentally the left hand is used in the same way by both performers. The index finger is used as an anchor with the index finger and thumb being used as a fulcrum. The thumb, being placed on the top of the neck aids with the upward inflection of strings to produce blue notes. In both guitarists melodic material is presented by toggle action between the index finger and the middle and ring fingers. In Johnson's and Walker's performance linear motion is characteristically produced with 4 - 3 - 1. Johnson produces his characteristic *x* motives with a linear motion that sequences fingers 3 - 2 - 1. Although the hand is used in the same manner by the two performers the tones that are produced vary because of the location on the fretboard relative to the tonic chord.

Walker only used the A shape position for one sole motive throughout the transcriptions, whereas Johnson made more frequent use of the E shape position, especially in the later period. A number of Johnson's motives that were catalogued in the E shape position are unlike those of Walker. This possibly implies that the two performers had no influence on each other. As both performers have been seen to use the uncharacteristic position in their output it must be presumed that they did not exploit these positions more thoroughly because of aesthetic considerations.

The specific nature of the influence of Walker and Johnson can be seen in the adoption of their gestural and motivic devices in later players. The Chicago lead guitarists seem to have adopted the E position from Walker but characteristically leave blue notes largely unresolved. The pentatonic definition of blues scale seems to have been derived from the Chicago style.

It was seen that B. B. King combined the motives and movement strategies of both Johnson and Walker and expanded the genre with his own ideas to form a Memphis synthesis blues style. King, the protagonist of the Memphis style, has always credited Johnson and Walker as prime influences on his style. His influence is central to the blues idiom because he “exported that sound to the world”. (Guralnick 1982: 114)

As a genre blues gestures can be analysed and described. This process would impart the technical skills required to assimilate and reproduce the style. This is evident in the evolution of the British blues boom, whereby middle class British born musicians were able to participate in the genre. It was indicated that later rock stylists adopted the motives derived from Walker and Johnson either directly or via King.

Many guitarists state that they learned how to play blues by copying licks off recordings. One example, an interview with the white blues guitarist Johnny Winter (2002: 152), is typical.

I would learn how to play a record note for note... I just took apart what I heard and assimilated it, and then I guess it would come out part mine and part somebody else's. There's nobody who really plays *originally*. You can't. You can find some of everybody's licks in almost everybody's playing, but I tried to find my own voice after I got the basic thing down... I've listened to so many records that the licks just come from everything I've heard.

If Walker's and Johnson's legacy to improvised blues melodic language were confined to one motive each, for Johnson it would be the *x* motive and for Walker the motives that begin with the inflected 4th - 5th - root cell.

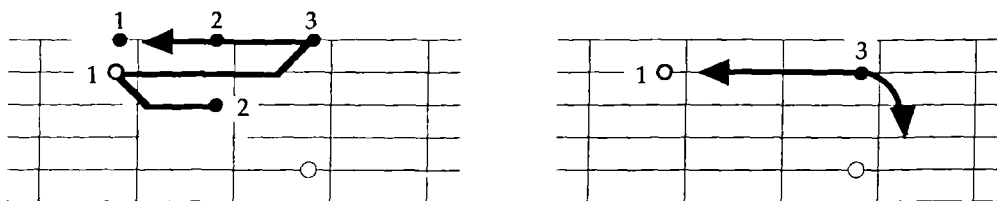


Fig. 6-5. Johnson *x* motive.

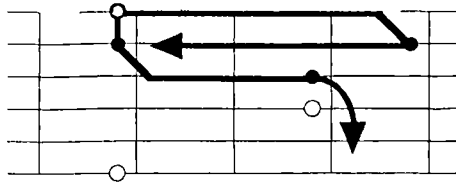


Fig. 6-6. Walker inflected 4th - 5th - root motive.

These two gestures have permeated blues and rock guitar from their inception to today.

Influence between different players can be examined in terms of specific fingering locations and strategies. This process can be enlarged to define a style, or to divulge differences between sub-genres as, for example, Chicago and Memphis styles or even between different styles of guitar playing as, for example, jazz and blues. It would be informative to compare the strategies of the jazz musician Charlie Christian improvising on the blues form, with the approach of Walker. Christian was fundamentally a blues player (many of his own compositions being on twelve bar models) who, it is fairly evident even with a cursory examination, fused blues movement strategies with moves that he had copied from Django Reinhardt, a defining act to the genre of jazz guitar.

The analytical model could be enlarged to examine the role different instruments play in the production of a genre. How does blues differ on account of the instrument itself, whether it be performed on the guitar or, for example, a saxophone? And to what extent are the physical properties of the instrument responsible for this?

A history of art tends to be a history of great figures working within a tradition. Thus histories of art, literature or music may contain sections on Picasso, D. H. Lawrence and Beethoven respectively. Vague terms such as pioneer, innovatory and influential are used in relation to artists. The analyst might attempt to examine the nature of these terms from a body of the artists work. In this thesis Johnson and Walker are seen to be key figures in the evolution of a blues guitar genre.

There is also a genealogy in art; an artist has a unique place in history. The scientist Jacob Bronowski uses the term "cultural evolution" suggesting that the artist uses imagination to explore "natural fact and human emotion" (1974: 59).

Bronowski sees the hand "...when it is used as a tool as an instrument of discovery... in the end the march of man is the refinement of the hand in action" (1974: 116). He quotes the sculptor Michelangelo,

To break the marble spell

Is all the hand that serves the brain can do

Michelangelo believed that he saw the form in the stone before he began to carve. This is, of course, a metaphor and it could be said that a different artist would perceive a different form in the same stone. By analogy the guitar could be compared to the sculptor's stone, all of the tones that have been played throughout the history of the instrument are inherent on the fretboard, but each performer creates a unique sequence of tones. As Bronowski puts it:

In one sense, everything that we discover is already there: a sculptured figure and the law of nature are both concealed in the raw material. And in another sense, what a man discovers is discovered by him; it would not take exactly the same form in the hands of someone else" (1974: 115).

The thesis has sought to identify key figures, explore their position in the cultural evolution of a blues style, and consider their improvisations as creations made by a selective brain manipulating the human hand.

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